TEAC®

SERVICE MANUAL

model 124 SYNCASET A-108SYNC

Stereo Cassette Deck with Dolby* System

NOTE

If any of the adjustments or repairs seem too complicated or are difficult to accomplish, please contact the nearest TEAC Factory Service Department or write directly to a TEAC office, the addresses of which are printed on the back cover of this manual.

When ordering replacement parts, please refer to the PARTS LIST which is printed separately from this manual and included as an insert.

TEAC CORPORATION

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* Noise reduction circuit made under license from Dolby Laboratories. The word "Dolby" and the Double-D symbol are trademarks of Dolby Laboratories.

1. PARTS LOCATION

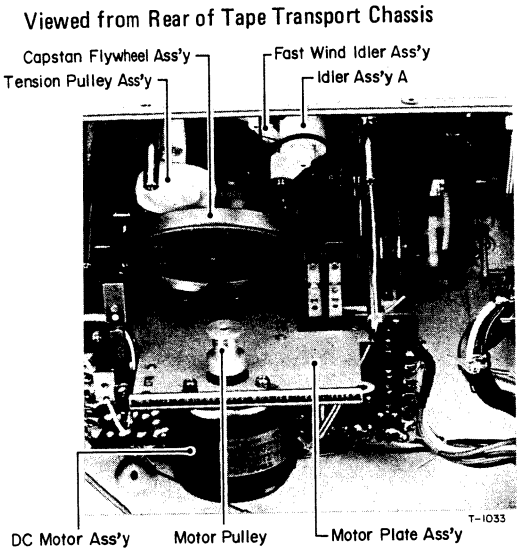

Fig. 1-1 Enlarged View of Driving Parts (w. Motor Removed)

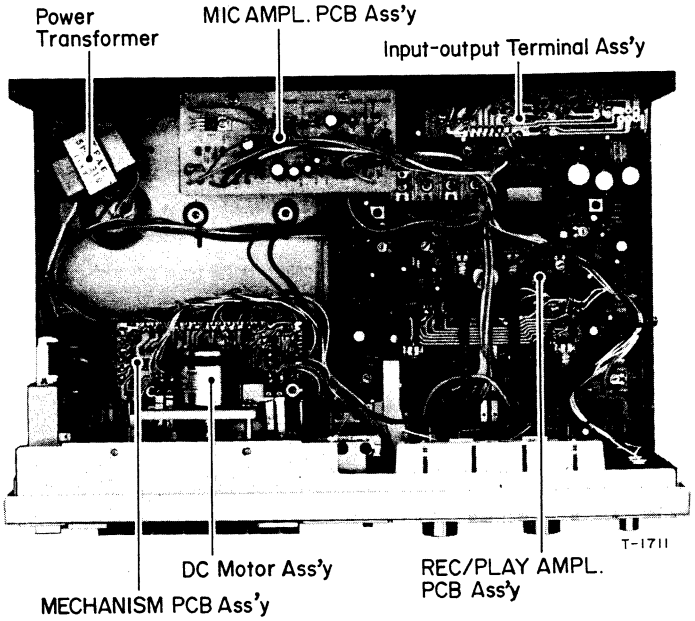

Fig. 1-2 Top View

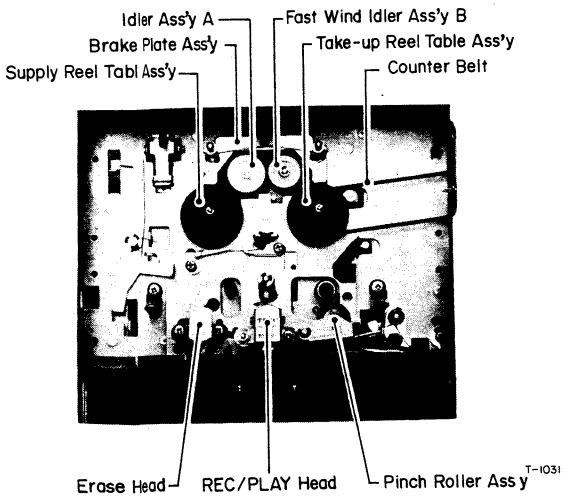

Fig. 1-3 Left Front View (Front Panel and Cassette Holder Ass'y Removed)

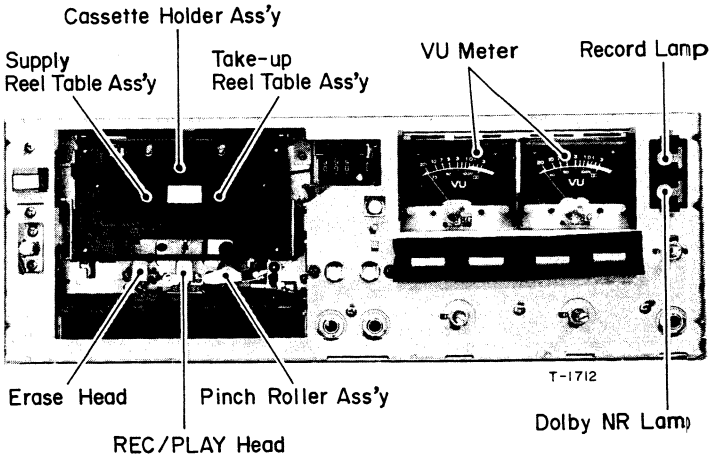

Fig. 1-4 Front View

2. SPECIFICATIONS AND SERVICE DATA

SPECIFICATIONS

Track System	1/4-track, 2-channel stereo
Heads	Two: Erase and Record/Playback
Type of Tape	Cassette tape, C-60 and C-90 (Philips type)
Tape Speed	4.8 cm/s (1-7/8 ips)
Inputs	Microphones: Min. input level: –67 dB (346 μV)/10 kohms
(level and impedance)	Line: Specified input level: –9 dB (275 mV)/50 kohms
	Min. input level: –19 dB (86.9 mV)
	DIN*: Min. input level: –35 dB (13.8 mV)
Outputs	Line out: Specified output level: –5 dB (435 mV)/50 kohms
(level and load impedance)	Headphones: Specified output level: –21 dB (69 mV)/8 ohms
Equalization	CrO_2: 3,180 μs + 70 μs
	NORMAL: 3,180 μs + 120 μs
Head Configuration	1/4-track, 2-channel Erase Head
	1/4-track, 2-channel Record/Playback Head
Motor	DC servo motor (FG type)
Bias Frequency	100 kHz
Power Requirements	100/117/220/240 V, AC 50/60 Hz, 16.5 W (General Export Model)
	220 V AC 50 Hz, 17.5 W (Europe Model)
	240 V AC 50 Hz, 17.5 W (U.K. Model)
	117 V AC 60 Hz, 16.5 W (U.S.A./CANADA Model)
Weight	6.7 kg (14.8 lbs) net

* Pursuant to DIN Standards

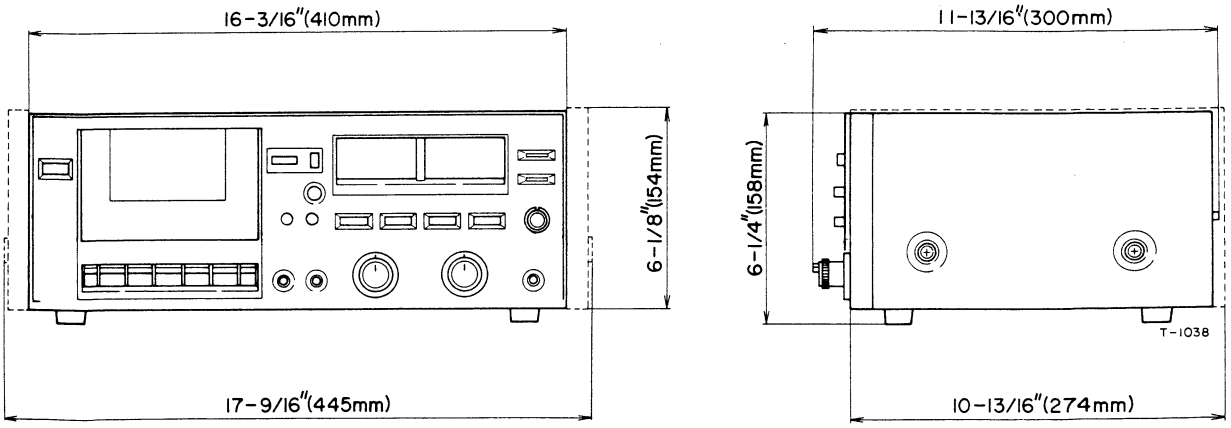

Fig. 2-1 Dimensions

SERVICE DATA

Mechanical

Tape Speed Deviation	3,000 Hz ± 45 Hz
Tape Speed Drift	45 Hz
Wow and Flutter	Playback: 0.10% (WRMS) Record/Playback: 0.25% (RMS)
Pinch Roller Pressure	400 g ± 50 g (12.3 ~ 15.9 oz)
Reel Torque	Take Up: 40 ~ 60 g·cm (0.6 ~ 0.8 oz·inch) Fast Forward: 80 to 150 g·cm (1.1 to 2.1 oz·inch) Rewind: 100 to 150 g·cm (1.4 to 2.1 oz·inch)
Fast Winding Time	90 seconds for C-60

Electrical

Frequency Response	Refer to frequency response limits charts on page 14 and 17.
Signal to Noise Ratio	Playback method: 46 dB min. (MIC BLEND control at MIN) 43 dB min. (MIC BLEND control at MAX) Record/Playback method: BIAS/EQ, CrO_2 45 dB min. BIAS/EQ, NORMAL 44 dB min. With Dolby Noise Reduction used for recording and playback, S/N ratio is improved by up to 5 dB at 1 kHz and up to 10 dB at frequencies over 5 kHz.
Erase Efficiency	65 dB min. (Normal stereo recording) 60 dB min. (R-ch, SYMUL-SYNC recording)
Channel Separation	30 dB min. (at 1 kHz)
Crosstalk between Adjacent Tracks	40 dB min. (at 125 kHz)
Total Harmonic Distortion	BIAS/EQ, CrO_2: 2.2% (max.) BIAS/EQ, NORMAL: 2.5% (max.)

NOTE:
- Improvements may result in Specifications and Service Data changes.
- dB values in the Specifications and Service Data are based on 0 dB = 0.775 V. In case the AC Voltmeter being used is calibrated to some other standard such as 0 dB = 1 V etc, please use the voltage values given in parentheses as the test values.

3. TEST EQUIPMENT

NOTE: When ordering special tools, jigs and test tapes, allow for the longer delivery time that is required for them.

3-1. ORDINARY TOOLS AND EQUIPMENT

1.	Spring scale:	For pinch roller pressure check, 0 to 1 kg (2.2 lbs)
2.	Wow/flutter meter:	MEGURO DENPA SOKKI K.K., Model MK-668A, or D & R Co., Modle FL-4B
3.	Frequency counter:	Digital type, capable of 10 Hz to 100 kHz indication
4.	AF oscillator:	10 Hz to 100 kHz
5.	AC voltmeter:	0.1 mV to 300 V
6.	Attenuator:	General purpose
7.	Distortion analyzer:	Basic frequency 400 Hz/1 kHz
8.	Oscilloscope:	General purpose
9.	Band-pass filter:	1 kHz narrow band-pass type
10.	Test load resistor:	Non inductive type 8 ohm/1 W
11.	Plastic alignment tool:	
12.	Head demagnetizer:	TEAC E-3 or equivalent
13.	Cleaner:	TEAC TZ-261 tape recorder cleaner kit or pure alcohol
14.	Oil:	TEAC TZ-255 oil kit or equivalent
15.	Bulk tape eraser:	TEAC E-2 or equivalent

3-2. SPECIAL TOOLS AND JIGS

1.	Cassette torque meter:	For take-up and supply torque checks, 0 to 100 g·cm (0 to 1.4 oz·inch)
2.	Cassette torque meter:	For fast forward and rewind torque checks, 0 to 160 g·cm (0 to 2.2 oz·inch)
3.	Mirror-equipped tape path test tape:	

3-3. TEAC TEST TAPES

Remarks: 0 dB = DIN reference level (333 Hz)

For tape speed and wow/flutter test

1.	MTT-111:	• For playback method • 3,000 Hz/−10 dB
2.	MTT-501:	• For record/playback method (blank tape)

For playback performance alignment

3.	MTT-150:	• For Dolby level calibration • Dolby B-type tone (400 Hz tone), 200 nWb/m
4.	MTT-316:	• For frequency response test for EQ, CrO_2 • 3,180 μs + 70 μs • 315 Hz/−4 dB, 31.5 Hz to 14 kHz/−24 dB
5.	MTT-216:	• For frequency response test for EQ, NORMAL • 3,180 μs + 120 μs • 315 Hz/−4 dB, 31.5 Hz to 14 kHz/−24 dB

For record performance alignment (blank tape)

6.	MTT-506 or similar:	• For BIAS/EQ, CrO_2
7.	MTT-501 or similar:	• For BIAS/EQ, NORMAL

TEAC®

PARTS LIST

model 124 SYNCASET

A-108SYNC

Stereo Cassette Deck with Dolby System

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   3. MIC AMPL. PCB ASSY 11, 13

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PARTS ORDERING INFORMATION

Spare parts are available through your nearest TEAC Authorized Service Center or directly from the TEAC office, the address of which is printed on the back cover. When ordering parts, always include the following information:

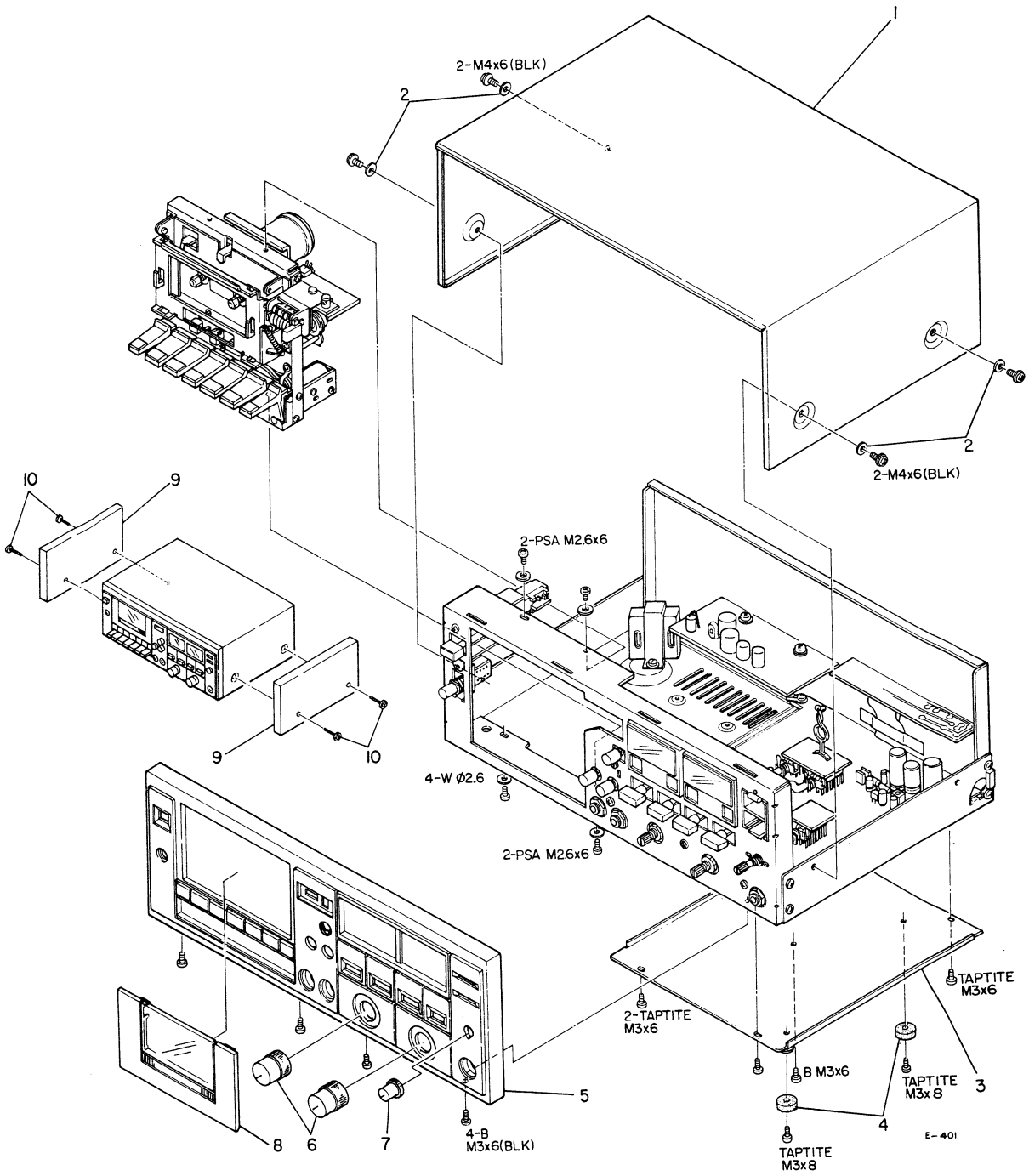
1. MODEL
2. REF. NO.
3. PARTS NO.
4. DESCRIPTION
5. UNIT SERIAL NO.
6. MANUAL CODE NO.

NOTICE REGARDING PARTS ORDERS

1. Do not order by only REF. NO.
2. In some instances, individual minor parts are not available. In this case, the entire assembly, including the part requested, will be sent to you.
3. Parts are identical between different models with the exceptions as coded by the designations in the REMARKS column.
4. PC Boards shown viewed from foil side.
5. Parts marked with * require longer delivery time than regular parts.

1. EXPLODED VIEWS AND PARTS LISTS

EXPLODED VIEW-1

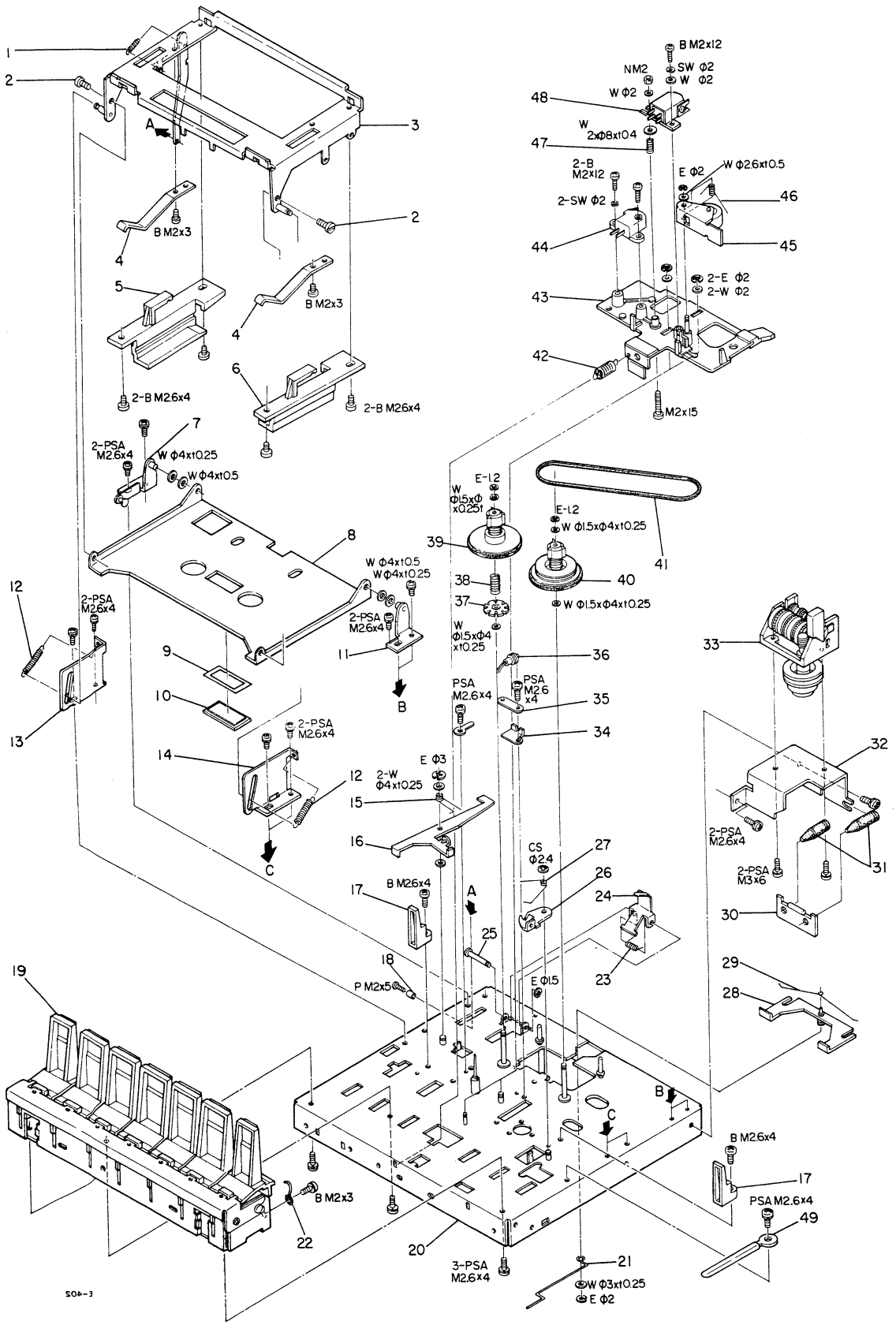


REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
1 - 1	*55522020	Cover, Top	
1 - 2	*55800050	Washer	
1 - 3	*55522010	Cover, REC/PLAY PCB	
1 - 4	*55346710	Foot	JAPAN
	55344320	Foot	All except JAPAN
1 - 5	*55022170	Panel Assy, H	JAPAN
	*55022180	Panel Assy, I	All except JAPAN, U.S.A.
	*55022320	Panel Assy, J	U.S.A.
1 - 6	*55046790	Knob Assy, A	
1 - 7	*55046800	Knob Assy, B	
1 - 8	*55047010	Cover Assy, Cassette; D	
1 - 9	*55131920	Board, Side	LIMITED AREAS
1 - 10	55045490	Screw Assy	LIMITED AREAS

INCLUDED ACCESSORIES

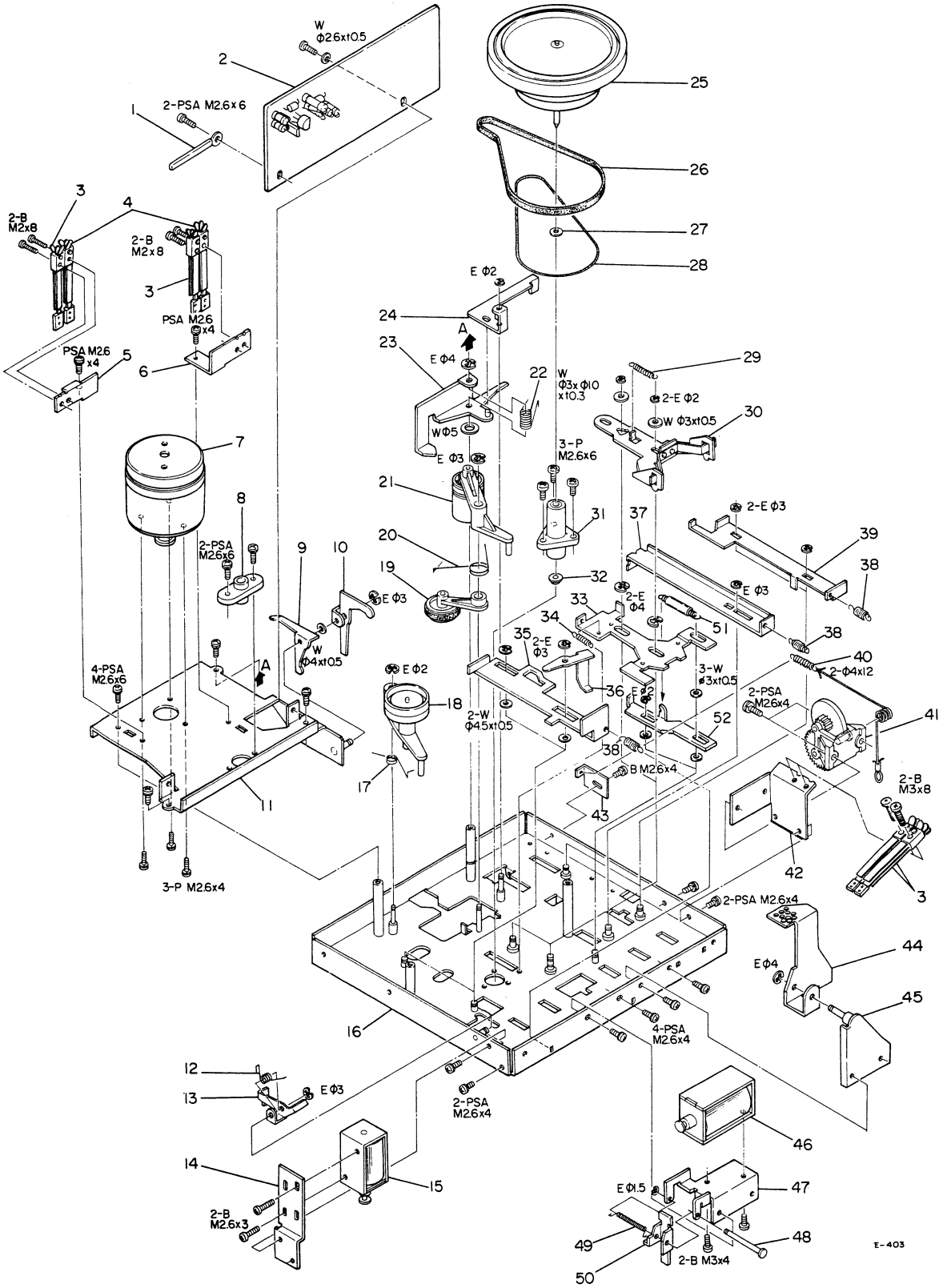
REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	51280650	Cord Assy, Input-output Connection	
	51013690	Information Supplement, Cassette	JAPAN
	51013450	Information Supplement, Cassette	U.S.A.
	51014950	Information Supplement, Cassette	All except JAPAN, U.S.A.
	50090240	Retainer, AC Power Cord	
	51016110	Owner's Manual, f-200VA	JAPAN
	51016530	Owner's Manual, 124 SYNCASET	U.S.A.
	51016120	Owner's Manual, A-108 SYNC	All except JAPAN, U.S.A.

EXPLODED VIEW-2



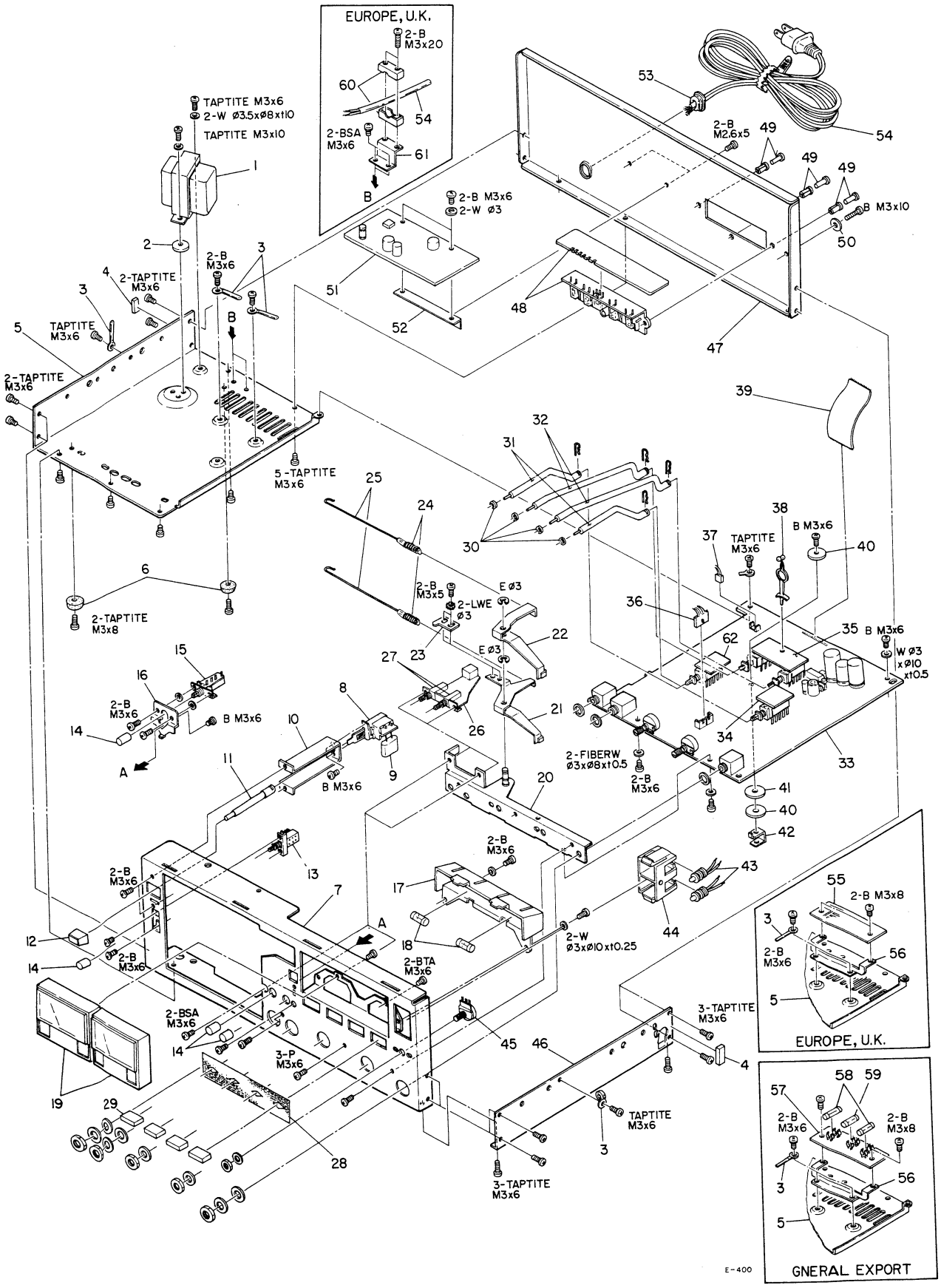
REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
2 - 1	*55203380	Spring	
2 - 2	*55810570	Screw, Cassette Holder	
2 - 3	*55044763	Holder Assy, Cassette; A	
2 - 4	55550870	Spring, Plate	
2 - 5	55344512	Cassette Guide, Left	
2 - 6	55344502	Cassette Guide, Right	
2 - 7	*55044780	Bracket Assy, Holder; B	
2 - 8	*55531770	Holder, Cassette; B	
2 - 9	*55550880	Tape, Adhesive	
2 - 10	*55344430	Cover, Lamp	
2 - 11	*55044770	Bracket Assy, Holder; A	
2 - 12	*55203370	Spring, Eject	
2 - 13	*55550920	Guide Plate, Holder; B	
2 - 14	*55550910	Guide Plate, Holder; A	
2 - 15	*55203370	Spring, Arm	
2 - 16	*55550830	Arm, Preventing	
2 - 17	55344440	Guide, Cassette	
2 - 18	*55446980	Collar, Stopper	
2 - 19	55021643	Button Assy	
2 - 20	*55021740	Chassis Assy, Mechanism	
2 - 21	*55203340	Rod, Brake Actuating	
2 - 22	*55203420	Clamper, Cord	
2 - 23	*55203490	Spring, Preventing; A	
2 - 24	*55550811	Lever, Safety; C	
2 - 25	*55446560	Shaft, Safety Lever	
2 - 26	*50846432	Plaft, Pause Lock	
2 - 27	*50845502	Spring, Pause Lock	
2 - 28	*55044722	Plaft Assy, Brake	
2 - 29	*55203330	Spring, Brake	
2 - 30	*51685490	PCB Assy, Reed Switch	
	*51675490	PCB, Reed Switch	Part of 2 - 30
	51380060	Reed Switch	Part of 2 - 30
2 - 31	*55344480	Cushion, Rubber	
2 - 32	*55550710	Bracket, Counter	
2 - 33	55031300	Counter Assy	
2 - 34	*55550930	Bracket, Lamp	
2 - 35	*55551970	Retainer, Lamp Cord	
2 - 36	*51422010	Lamp	
2 - 37	*55343040	Plate, Friction	
2 - 38	*55241150	Spring, Friction Plate	
2 - 39	55044640	Reel Table Assy, Supply	
2 - 40	55044650	Reel Table Assy, Take-up	
2 - 41	55344470	Belt, Counter	
2 - 42	55203260	Spring, Lever A	
2 - 43	*55030370	Plate Assy, Head Base	
2 - 44	50664600	Head, Erase	
2 - 45	55044590	Pinch Roller Assy	Part of 2 - 44
2 - 46	55203271	Spring, Pinch Roller	Part of 2 - 44
2 - 47	*55241200	Spring, REC/PLAY Head	
2 - 48	55696000	Head, REC/PLAY	
2 - 49	55810380	Retainer, Cord; A	

EXPLODED VIEW-3



REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
3 - 1	55816380	Retainer, Cord; A	
3 - 2	51688740	PCB Assy, MECHANISM	
3 - 3	51350020	Switch, Leaf; 1A	
3 - 4	51350010	Switch, Leaf; 2A	
3 - 5	*55550690	Bracket, Switch; A	
3 - 6	*55550700	Bracket, Switch; B	
3 - 7	71051260	DC Motor Assy	
3 - 8	*55342770	Bearing, Flywheel	
3 - 9	*55550670	Lever, Slide Switch	
3 - 10	*55550680	Arm, Record	
3 - 11	*55044630	Plate Assy, Motor	
3 - 12	*55203531	Spring, Return	JAPAN
3 - 13	*55551030	Arm, Release; C	JAPAN
3 - 14	*55552042	Bracket, Solenoid	JAPAN
3 - 15	51630300	Solenoid	JAPAN
3 - 16	*55021622	Chassis Assy, Mechanism	
3 - 17	55203300	Spring, Tension	
3 - 18	55044660	Pulley Assy, Tension	
3 - 19	55044690	Idler Assy, Fast Wind; B	
3 - 20	55203310	Spring, Idler Assy	
3 - 21	55044670	Idler Assy, A	
3 - 22	*55203360	Spring, Pressure	
3 - 23	*55044751	Arm Assy, Cassette Pressure; A	
3 - 24	*55550850	Arm, Cassette Pressure; B	
3 - 25	55044610	Flywheel Assy, Capstan	
3 - 26	55344460	Belt, Capstan Drive	
3 - 27	*55500310	Washer, Thrust	
3 - 28	55344160	Belt, Fast Wind	
3 - 29	*55203480	Spring, Lever; D	
3 - 30	*55044710	Lever Assy, Fast Wind	
3 - 31	*55040910	Housing Assy, Capstan	
3 - 32	*55341300	Washer, Oil Retaining	
3 - 33	*55550740	Plate, Brake Actuating	
3 - 34	*55203320	Spring, Lever B	
3 - 35	*55044731	Lever Assy, Pause	
3 - 36	*55550771	Arm, Pause	
3 - 37	*55550800	Lever, Record	
3 - 38	*55203260	Spring, Lever; A	
3 - 39	*55550820	Lever, Eject	
3 - 40	*55203390	Spring, Damper	
3 - 41	*55044940	Holder Assy, Damper; B	
3 - 42	*55556111	Bracket, Damper	
3 - 43	*55550950	Angle Plate, Spring	
3 - 44	*55556100	Arm, Record; VA	
3 - 45	*55044740	Holder Assy, Record Arm	
3 - 46	55044811	Solenoid	
3 - 47	*55551001	Bracket, Solenoid	
3 - 48	*55446650	Shaft, Release Arm; A	
3 - 49	*55203430	Spring, Release Arm	
3 - 50	*55551020	Arm, Release; B	
3 - 51	55203460	Spring, Lever; C	
3 - 52	55551630	Lever, FF; C	

EXPLODED VIEW-4

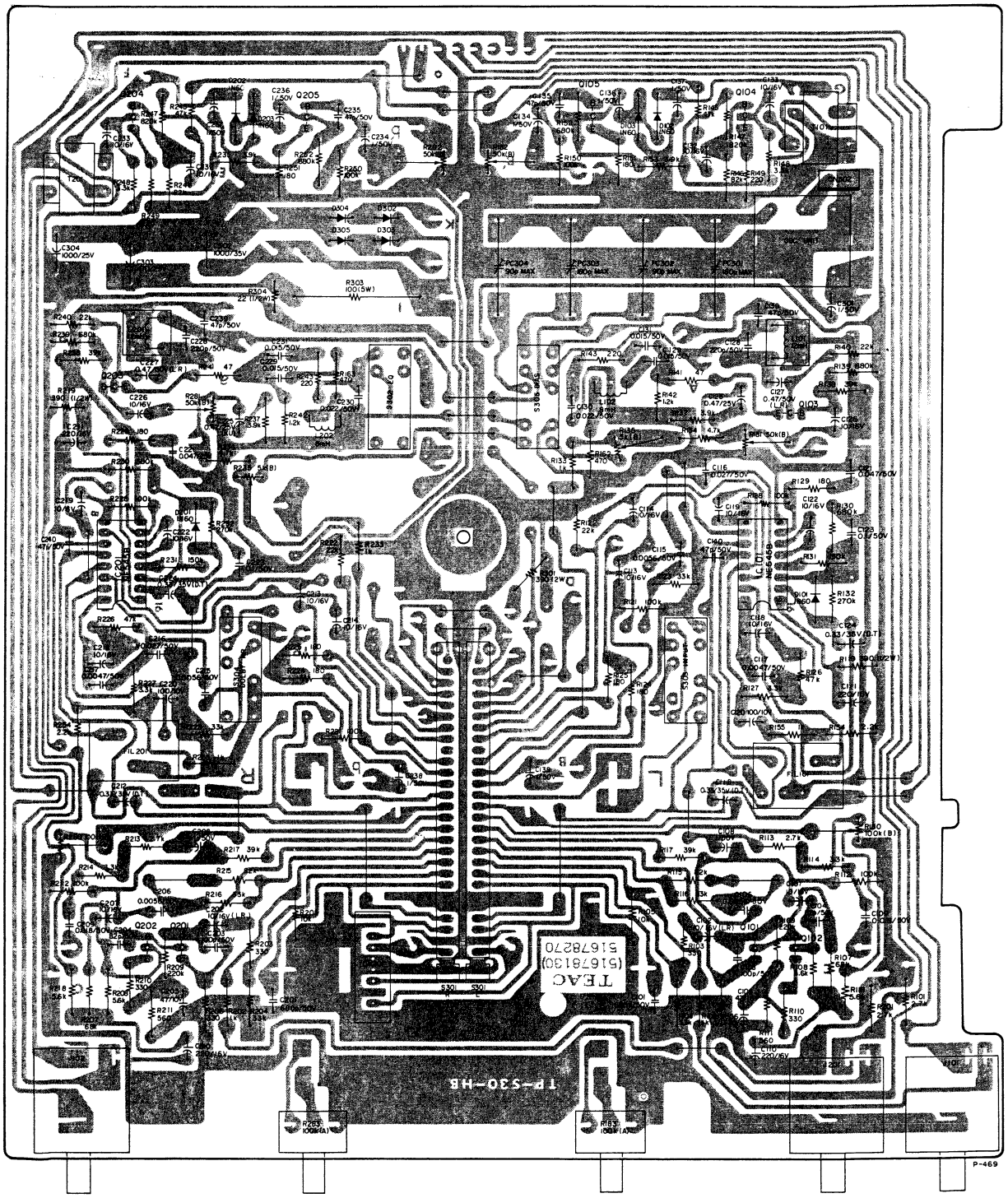


REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
4 - 1	51521310	Transformer, Power	JAPAN
	51521360	Transformer, Power	GENERAL EXPORT
	51521340	Transformer, Power	EUROPE, U.K.
	51521320	Transformer, Power	U.S.A.
	51521330	Transformer, Power	CANADA
4 - 2	*55800040	Washer, Aluminum	
4 - 3	55810380	Retainer Cord; A	
4 - 4	*55550550	Cushion	
4 - 5	*55521990	Chassis, Bottom	
4 - 6	*55346710	Foot	JAPAN
	55344320	Foot	All except JAPAN
4 - 7	*55523660	Chassis, Front; A	
4 - 8	51340360	Switch, Power	JAPAN, GENERAL EXPORT
	51340440	Switch, Power	EUROPE, U.K.
	51340370	Switch, Power	U.S.A.
	51340180	Switch, Power	CANADA
4 - 9	50529050	Spark Killer, 0.1 mfd + 120 ohm 400V AC	JAPAN
	51890010	Spark Killer, 4700 pfd	EUROPE, U.K.
	50529070	Spark Killer, 0.01 mfd + 300 ohm 400V AC	GENERAL EXPORT
	50529110	Spark Killer, 0.033 mfd + 120 ohm 250V AC	CANADA
	50529060	Spark Killer, 0.033 mfd + 120 ohm 125V AC	U.S.A.
4 - 10	*55550611	Bracket, Power Switch	
4 - 11	*55344221	Link, Power Switch	
4 - 12	55344310	Botton, B	
4 - 13	*51340391	Switch, Push	
4 - 14	55342961	Botton, Push Switch	
4 - 15	*51340740	Switch, Push	
4 - 16	*55551481	Bracket, Push Switch	
4 - 17	*55046970	Holder Assy, Meter Lamp	
4 - 18	*51420220	Lamp, 6.3V 250mA	
4 - 19	*51650480	Meter, VU	
4 - 20	*55531860	Bracket Assy, Record Lever	
4 - 21	*55346530	Lever, Record; A	
4 - 22	*55346540	Lever, Record; B	
4 - 23	*55556170	Plate, SYNC Switch	
4 - 24	*55242101	Spring, Record Lever	
4 - 25	*55242090	Link, Record Lever; A	
4 - 26	*51688641	PCB Assy, VA SWITCH	
	*51678641	PCB, VA SWITCH	Part of 4 - 26
4 - 27	*51340880	Switch, Push; 2-gang	Part of 4 - 26
4 - 28	55552170	Cover, Switch	
4 - 29	55344300	Button, A	
4 - 30	*55800030	Washer, Fiber	
4 - 31	*55346520	Link, B	
4 - 32	*55344200	Link, A	
4 - 33	*51688750	PCB Assy, REC/PLAY	
4 - 34	*51678890	PCB, SW: D	
4 - 35	*51675420	PCB, B	
4 - 36	*50438480	Connector Socket, 6P	
4 - 37	*51221010	Connector Socket, 3P	
4 - 38	*50333130	Clamper, Cord	
4 - 39	*51272160	Ribbon Wire	
3 - 40	*55800070	Washer	
4 - 41	*55800060	Washer	
4 - 42	*55550591	Bracket, REC/PLAY PCB	
4 - 43	51422400	Lamp, w/Holder	
4 - 44	*55344230	Holder, Lamp	
4 - 45	*51502310	Var. Res., MIC BLEND	
4 - 46	*55531710	Chassis, Right	
4 - 47	*55522000	Panel, Rear	
4 - 48	51685470	Terminal Assy, Input-output	
	51260301	Terminal, Input-output	Part of 4 - 48
	51675470	PCB, Input-output	Part of 4 - 48

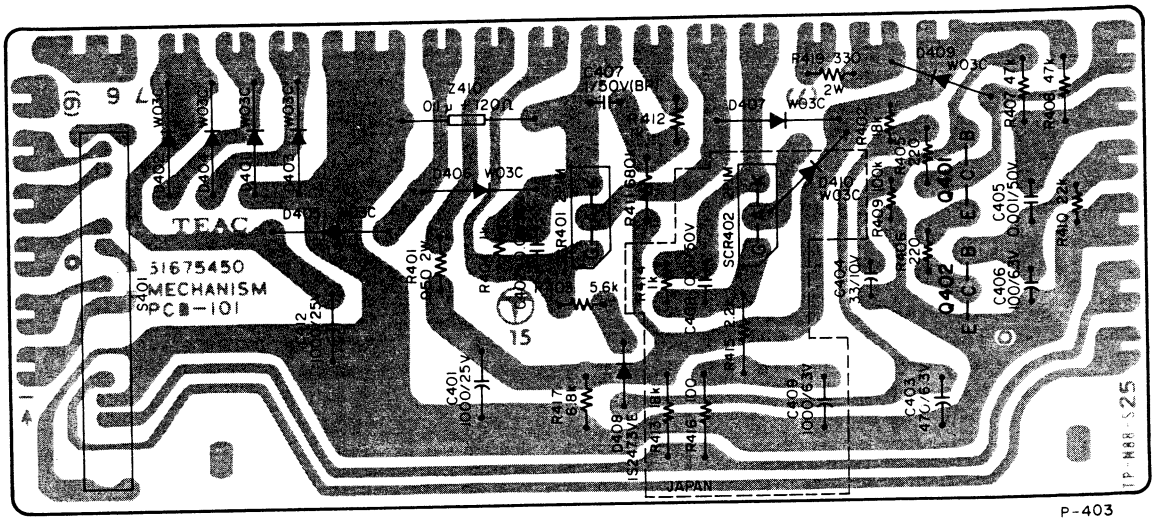
(Continued on page 14)

2. PC BOARD SECTION(Diagram)

2-1. REC/PLAY AMPL. PCB ASSY



2-2. MECHANISM PCB ASSY



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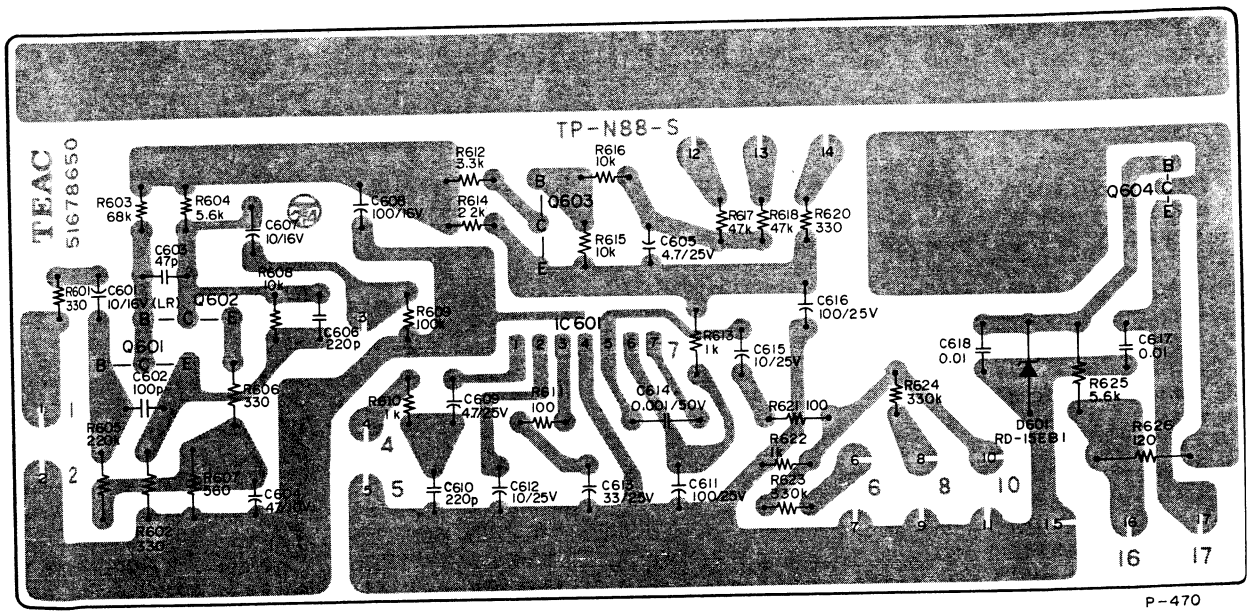
2-3. MIC AMPL. PCB ASSY



P-470

2. PC BOARD SECTION (Parts List)

2-1. REC/PLAY AMPL. PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51688750	PCB Assy, REC/PLAY AMPL.
	51678270	PCB, REC/PLAY AMPL.
	IC's	
IC101, IC201	50427280	Dolby, NE545B
	TRANSISTORS	
Q101, Q201	50423590	2SC900UA
Q102, Q202	50423590	2SC900UA
Q103, Q203	50424860	2SC536G
Q104, Q204	50424860	2SC536G
Q105, Q205	50424860	2SC536G
	DIODES	
D101, D201	50422180	1N60
D102, D201	50422180	1N60
D103, D203	50422180	1N60
D302~D305	51430890	W03C
	RESISTORS	
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.	
R101, R201	51830920	2.7 k ohm
R102, R202	51830820	1 k ohm
R103, R203	51830700	330 ohm
R104, R204	51831180	33 k ohm
R105, R205	51831050	10 k ohm
R106, R206	51830700	330 ohm
R107, R207	51831260	68 k ohm
R108, R208	51831000	5.6 k ohm
R109, R209	51831380	220 k ohm
R110, R210	51830700	330 ohm
R111, R211	51830760	560 ohm
R112, R212	51831300	100 k ohm
R113, R213	51830920	2.7 k ohm
R114, R214	51830940	3.3 k ohm
R115, R215	51831280	82 k ohm
R116, R216	51831180	33 k ohm
R117, R217	51831200	39 k ohm
R118, R218	51831000	5.6 k ohm
R119, R219	50574720	390 ohm ½W
R121, R221	51831300	100 k ohm
R122, R222	51831140	22 k ohm
R123, R223	51831180	33 k ohm
R124, R224	51830640	180 ohm
R125, R225	51830640	180 ohm
R126, R226	51831220	47 k ohm
R127, R227	51830940	3.3 k ohm
R128, R228	51831300	100 k ohm
R129, R229	51830640	120 ohm
R130, R230	51831500	680 k ohm
R131, R231	51831340	150 k ohm
R132, R232	51831400	270 k ohm
R133, R233	51830820	1 k ohm
R134, R234	51830980	4.7 k ohm
R137, R237	51830960	3.9 k ohm
R138, R238	51831200	39 k ohm
R139, R239	51831500	680 k ohm
R140, R240	51831140	22 k ohm
R141, R241	51830500	47 ohm

REF. NO.	PARTS NO.	DESCRIPTION
R142, R242	51830840	1.2 k ohm
R143, R243	51830680	220 ohm
R145, R245	51831220	47 k ohm
R146, R246	51831280	82 k ohm
R147, R247	51831520	820 k ohm
R148, R248	51830940	3.3 k ohm
R149, R249	51830660	220 ohm
R150, R250	51831300	100 k ohm
R151, R251	51830640	180 ohm
R152, R252	51831500	680 k ohm
R153, R253	51830960	3.9 k ohm
R154, R254	51830900	2.2 k ohm
R155, R255	51830820	1 k ohm
R162, R163	51830740	470 ohm
R301	50527370	390 ohm 1W Metal Film
R303	51844280	100 ohm 5W Cement
R304	50574420	22 ohm ½W
	CAPACITORS	
C101, C201	51711540	Polyst. 680 pfd 50V 5%
C102, C202	51715650	Elec. 10 mfd 16V (LR)
C103, C203	51711340	Polyst. 100 pfd 50V 5%
C104, C204	50547580	Dip. Mica 82 pfd 50V
C105, C205	51719570	Elec. 47 mfd 10V
C106, C206	51704190	Mylar 0.0056 mfd 50V 5%
C107, C207	51719390	Elec. 10 mfd 16V
C108, C208	51719180	Elec. 1 mfd 50V
C109, C209	51704310	Mylar 0.018 mfd 50V 5%
C110, C210	51719870	Elec. 220 mfd 16V
C111, C211	51719870	Elec. 220 mfd 16V
C112, C212	51719030	Dip. Tant. 0.33 mfd 35V 10%
C113, C213	51719390	Elec. 10 mfd 16V
C114, C214	51719390	Elec. 10 mfd 16V
C115, C215	51704190	Mylar 0.0056 mfd 50V 5%
C116, C216	51704350	Mylar 0.027 mfd 50V 5%
C117, C217	51704170	Mylar 0.0047 mfd 50V 5%
C118, C218	51719390	Elec. 10 mfd 16V
C119, C219	51719390	Elec. 10 mfd 16V
C120, C220	51719860	Elec. 100 mfd 10V
C121, C221	51704410	Mylar 0.047 mfd 50V 5%
C122, C222	51719390	Elec. 10 mfd 16V
C123, C223	51705190	Mylar 0.1 mfd 50V 10%
C124, C224	51719030	Dip. Tant 0.33 mfd 35V 10%
C125, C225	51715200	Elec. 0.47 mfd 25V (KU)
C126, C226	51719390	Elec. 10 mfd 16V
C127, C227	51715580	Elec. 0.47 mfd 50V (LR)
C128, C228	51711420	Polyst. 220 pfd 50V 10%
C129, C229	51704290	Mylar 0.015 mfd 50V 5%
C130, C230	51704330	Mylar 0.022 mfd 50V 5%
C131, C231	51704290	Mylar 0.015 mfd 50V 5%
C132, C232	51719390	Elec. 10 mfd 16V
C133, C233	51719390	Elec. 10 mfd 16V
C134, C234	51719180	Elec. 1 mfd 50V
C135, C235	51723080	Ceramic 47 pfd 50V 10%
C136, C236	51719180	Elec. 1 mfd 50V
C137, C237	51719180	Elec. 1 mfd 50V
C138, C238	51719180	Elec. 1 mfd 50V
C139, C239	50547420	Dip. Mica 47 pfd 50V
C140, C240	51723080	Ceramic 47 pfd 50V
C301	51719160	Elec. 1 mfd 50V
C302	51720110	Elec. 1000 mfd 35V
C303	51720030	Elec. 470 mfd 25V
C304	51720110	Elec. 1000 mfd 35V
C305	51719400	Elec. 10 mfd 25V

REF. NO.	PARTS NO.	DESCRIPTION
	VARIABLE RESISTOR	
R135, R235	51500970	Semi-fixed, 5 k ohm - B
R180, R280	51501060	Semi-fixed, 100 k ohm - B
R181, R281	51500590	Semi-fixed, 50 k ohm - B
R182, R282	51500970	Semi-fixed, 5 k ohm - B
R183, R283	51502300	100 k ohm - A
	TRIMMER CAPACITORS	
PC301	51700390	180 pfd MAX.
PC302	51700450	90 pfd MAX.
PC303	51700390	180 pfd MAX.
PC304	51700450	90 pfd MAX.
	COILS/TRANSFORMERS	
L101, L201	50566550	Coil, Trap; 12mH
L102, L202	50566350	Coil, Record EQ; 8mH
T101, T201	51520740	Transformer, Output; 3 k ohm : 8 ohm
	MISCELLANEOUS	
CN301	51220100	Connector, Plug; 6P
CN302	51222790	Connector, Plug; 3P
S301	51310430	Switch, Slide; 16PDT (x2)
S302	51340400	Switch, Push, 4PDT
S303	51340410	Switch, Push, 4PDT
S304	51340400	Switch, Push, 4PDT
S305	51340400	Switch, Push, 4PDT
J101, J201	51240390	Jack, MIC
J102	51240400	Jack, PHONES
	51470160	Socket, IC; 16P
W1, W2	51817670	Jumper
W3~W29	51814050	Jumper
	57240420	Pin, F-3 Type (x2)
	55447500	Pin (x2)
	51675420	PCB, Switch; B
	51678900	PCB, Switch; C·D
	51678280	PCB, Shield
	51678290	PCB, Jumper
FIL101, FIL201	51600400	Filter, 19 kHz

2-2. MECHANISM PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51688740	PCB Assy, MECHANISM
	51675450	PCB, MECHANISM
	TRANSISTORS	
Q401, Q402	51451220	2SC2021LNFS
	SCR's	
SCR401	51430900	2P1M
SCR402	51430900	2P1M (JAPAN)

REF. NO.	PARTS NO.	DESCRIPTION
	DIODES	
D401~D407	51430890	W03C
D408	50425170	1S2473VE
D409	51430890	W03C
D410	51430890	W03C (JAPAN)
	RESISTORS	
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.	
R401	50527410	950 ohm 2W 5% Metal Film
R402	50571120	18 k ohm
R403	50571000	5.6 k ohm
R404	50570820	1 k ohm
R405, R406	50570660	220 ohm
R407, R408	50571220	47 k ohm
R409	50571300	100 k ohm
R410	50571140	22 k ohm
R411	50571500	680 k ohm
R412	50570820	1 k ohm
R413	50571120	18 k ohm (JAPAN)
R414	50570820	1 k ohm (JAPAN)
R415	50570900	2.2 k ohm (JAPAN)
R416	50570580	100 ohm (JAPAN)
R417	50571020	6.8 k ohm
R419	50527130	330 ohm 2W Metal Film
	CAPACITORS	
C401	50555580	Elec. 1000 mfd 25V
C402	50548020	Mylar 0.01 mfd 50V 10%
C403	50554600	Elec. 470 mfd 6.3V
C404	50554240	Elec. 33 mfd 10V
C405	50548320	Mylar 0.001 mfd 50V 10%
C406	50554230	Elec. 100 mfd 6.3V
C407	50559420	Elec. 1 mfd 50V (B.P.)
C408	50548020	Mylar 0.01 mfd 50V 10% (JAPAN)
C409	50554870	Elec. 1000 mfd 6.3V (JAPAN)
C412	50555580	Elec. 1000 mfd 25V
Z410	50529050	Spark Killer 0.1 mfd + 120 ohm 400VAC
	MISCELLANEOUS	
S401	51310300	Switch, Slide; 6PDT

2-3. MIC AMPL. PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51688650	PCB Assy, MIC AMPL.
	51678650	PCB, MIC AMPL.
	IC	
IC601	50427370	TA7140P

REF. NO.	PARTS NO.	DESCRIPTION
	TRANSISTORS	
Q601, Q602	51450340	2SC900UA
Q603	51450940	2SA826LNR
Q604	51450720	2SD361D
	ZENER DIODE	
D601	51431340	RD-15EB1
	RESISTORS	
	All resistors are rated ±5% tolerance, ¼ watt and of carbon type unless otherwise noted.	
R601, R602	50570700	330 ohm
R603	50571260	68 k ohm
R604	50571000	5.6 k ohm
R605	50571380	220 k ohm
R606	50570700	330 ohm
R607	50570760	560 ohm
R608	50571060	10 k ohm
R609	50571300	100 k ohm
R610	50570820	1 k ohm
R611	50570580	100 ohm
R612	50570940	3.3 k ohm
R613	50570820	1 k ohm
R614	50571120	22 k ohm
R615, R616	50571060	10 k ohm

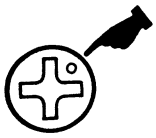
REF. NO.	PARTS NO.	DESCRIPTION
R617, R618	50571220	47 k ohm
R620	50570700	330 ohm
R621	50570580	100 ohm
R622	50570820	1 k ohm
R623, R624	50571420	330 k ohm
R625	50571000	5.6 k ohm
R626	50577270	120 ohm 2W Metal Film
	CAPACITORS	
C601	51700770	Elec. 10 mfd 16V (LR)
C602	50547440	Dip. Mica 100 pfd 50V
C603	50547420	Dip. Mica 47 pfd 50V
C604	50555540	Elec. 47 mfd 10V
C605	50554530	Elec. 4.7 mfd 25V
C606	50543420	Polyst. 220 pfd 50V
C607	50554050	Elec. 10 mfd 16V
C608	50554200	Elec. 100 mfd 16V
C609	50554530	Elec. 4.7 mfd 25V
C610	50543420	Polyst. 220 pfd 50V
C611	50554170	Elec. 100 mfd 25V
C612	50554040	Elec. 10 mfd 25V
C613	50554480	Elec. 33 mfd 25V
C614	50548320	Mylar 0.001 mfd 50V 5%
C615	50554040	Elec. 10 mfd 25V
C616	50554170	Elec. 100 mfd 25V
C617, C618	50542020	Ceramic 0.01 mfd 50V

(Continued from page 9)

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	*50570960	Carbon Res., 3.9 k ohm ¼W (R157, R257)	Part of 4 - 48
	*50571100	Carbon Res., 15 k ohm ¼W (R158, R258)	Part of 4 - 48
	*50571260	Carbon Res., 68 k ohm ¼W (R156, R256)	Part of 4 - 48
4 - 49	*55341180	Push Rivet	
4 - 50	*55550630	Washer, GND	
4 - 51	*51688650	PCB Assy, MIC AMPL	
4 - 52	*55556120	Bracket, MIC AMPL PCB	
4 - 53	*55300470	Strain Relief, AC Power Cord	All except EUROPE, U.K.
4 - 54	*51280340	Cord, AC Power	JAPAN, GENERAL EXPORT
	*51280170	Cord, AC Power	EUROPE
	*51280360	Cord, AC Power	U.K.
	*51280750	Cord, AC Power	U.S.A., CANADA
4 - 55	*51685481	PCB Assy, VOLTAGE SELECTOR	GENERAL EXPORT
	*51675481	PCB, VOLTAGE SELECTOR	Part of 4 - 55
	*55550620	Plate, VOLTAGE SELECTOR PCB	Part of 4 - 55
4 - 56	*55550600	Bracket, B	GENERAL EXPORT, EUROPE, U.K.
4 - 57	*51688820	PCB Assy, FUSE	EUROPE, U.K.
	*51678820	PCB, FUSE	Part of 4 - 57
	*51420870	Holder, FUSE	Part of 4 - 57
4 - 58	*51420880	FUSE, 250 mAT	Part of 4 - 57
4 - 59	*51421860	FUSE, 800 mAT	Part of 4 - 57
4 - 60	*55340841	Clamper, AC Power Cord	EUROPE, U.K.
4 - 61	*55550640	Bracket, Clamper	EUROPE, U.K.
4 - 62	*51678880	PCB, SW; C	

ASSEMBLING HARDWARE CODING LIST

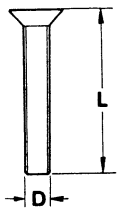
All screws conform to ISO standards, and have crossrecessed heads, unless otherwise noted. ISO screws have the head inscribed with a point as in the figure to the right.

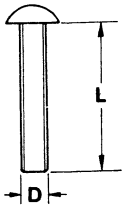


FOR EXAMPLE:

B M 3 x 6

- Length in mm (L)
- Diameter in mm (D) *
- Metric System
- Nomenclature





* Inner dia. for washers and nuts

	Code	Name	Type
MACHINE SCREW	**R**	Round Head Screw	
	P	Pan Head Screw	
	T	Stove Head Screw (Truss)	
	B	Binding Head Screw	
	F	Flat Countersunk Head Screw	
	O	Oval Countersunk Head Screw	
WOOD SCREW	**RW**	Round Head Wood Screw	
	FW	Flat Countersunk Wood Screw	
	OW	Oval Countersunk Wood Screw	
SEMS SCREW	**BSA**	Binding Head SEMS Screw(A Type)	
	BSB	Binding Head SEMS Screw(B Type)	
	BSF	Binding Head SEMS Screw(F Type)	
	PSA	Pan Head SEMS Screw(A Type)	
	PSB	Pan Head SEMS Screw(B Type)	

	Code	Name	Type
TAPPING SCREW	**BTA**	Binding Head Tapping Screw(A Type)	
	BTB	Binding Head Tapping Screw(B Type)	
	RTA	Round Head Tapping Screw(A Type)	
	RTB	Round Head Tapping Screw(B Type)	
SETSCREW	**SF**	Hex Socket Setscrew(Flat Point)	
	SC	Hex Socket Setscrew(Cup Point)	
	SS	Slotted Socket Setscrew(Flat Point)	
WASHER	**E**	E-Ring (Retaining Washer)	
	W	Flat Washer (Plain)	
	SW	Lock Washer (Spring)	
	LWI	Lock Washer (Internal Teeth)	
	LWE	Lock Washer (External Teeth)	
	TW	Trim Washer (Countersunk)	
NUT	**N**	Hex Nut	

model 124SYNCASET / A-108SYNC Stereo Cassette Deck with Dolby System

TEAC

TEAC CORPORATION	3-7-3, NAKA-CHO, MUSASHINO, TOKYO PHONE: (0422) 53-1111
TEAC CORPORATION OF AMERICA	7733 TELEGRAPH ROAD, MONTEBELLO, CALIFORNIA 90640 PHONE: (213) 726-0303
TEAC HONGKONG LIMITED	FLAT 78, PORTLAND HOUSE, 7TH FLOOR, BLOCK C, No. 41-D, MA TAU WEI ROAD, KOWLOON, HONGKONG. PHONE: 3-659071~4

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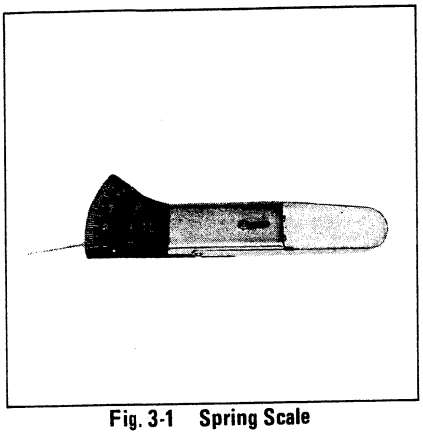


Fig. 3-1 Spring Scale

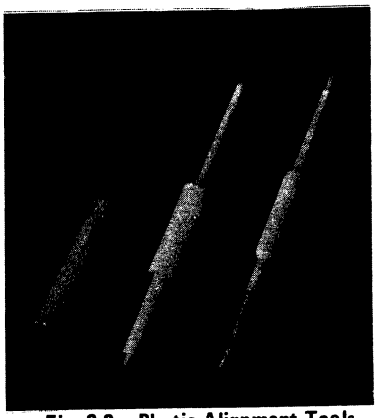


Fig. 3-2 Plastic Alignment Tools

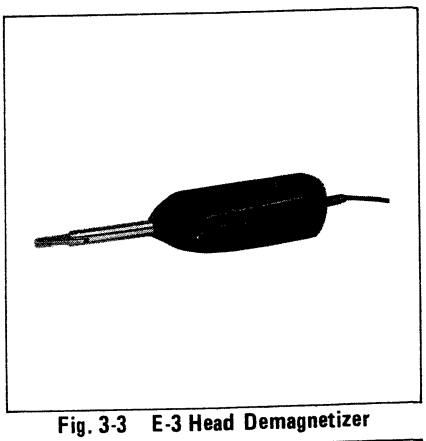


Fig. 3-3 E-3 Head Demagnetizer

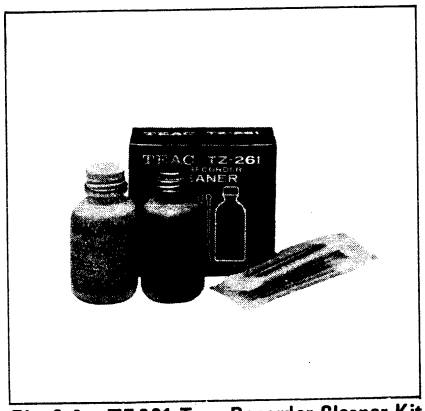


Fig. 3-4 TZ-261 Tape Recorder Cleaner Kit

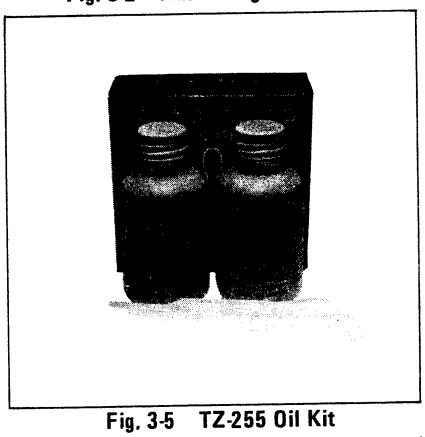


Fig. 3-5 TZ-255 Oil Kit

Fig. 3-6 E-2 Bulk Tape Eraser

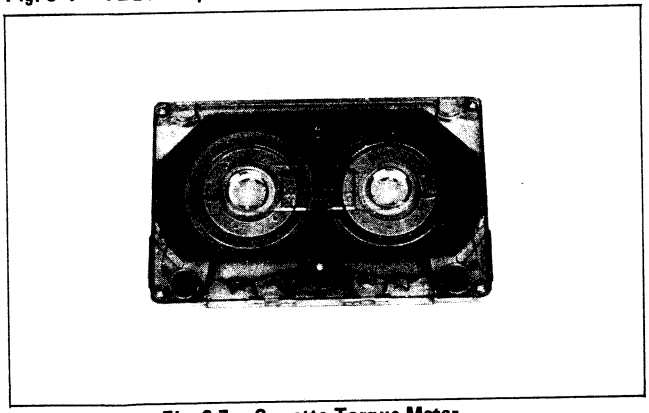


Fig. 3-7 Cassette Torque Meter

Fig. 3-8 Mirror-equipped Tape Path Test Tape

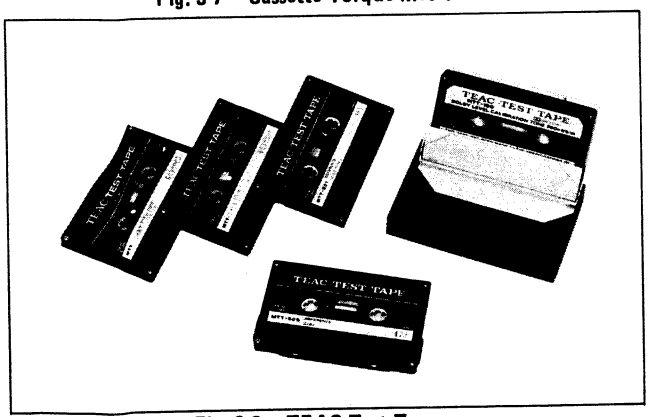


Fig. 3-9 TEAC Test Tapes

4. ILLUSTRATED DISASSEMBLY PROCEDURES

GENERAL NOTES

1. **Disassemble in number-order.**
2. Use the proper tools. Demagnetize the tools before use.
3. When mounting or removing a spring, check the position (direction) of the anchor or hook. The wrong position may change the tension.
4. When reassembling, don't forget to reinstall all hardware such as springs and washers etc.
5. To check the shape of assembling hardware (screws, etc.) see ASSEMBLING HARDWARE CODING LIST in the parts list.

4-1. EXTERNAL PARTS

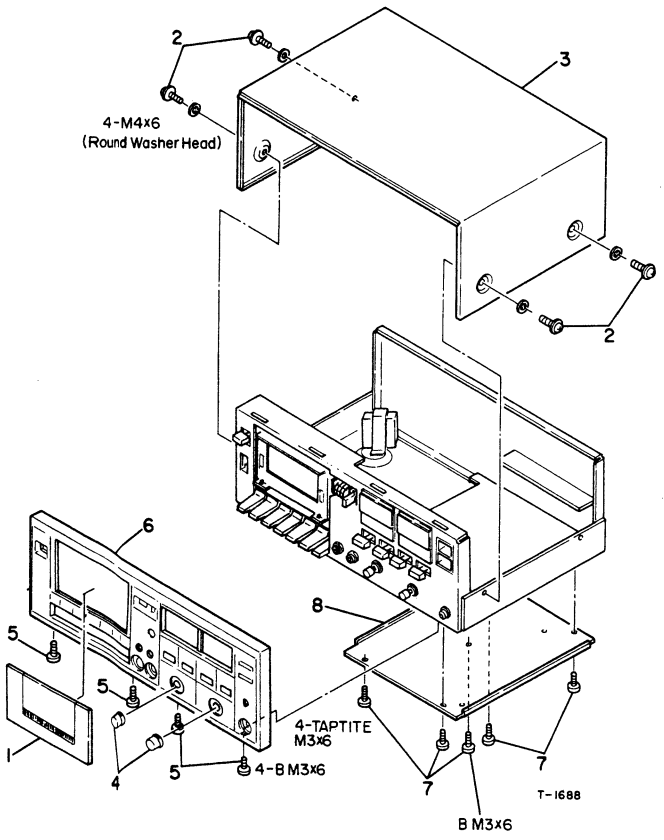


Fig. 4-1 External Parts

4-2. CASSETTE DAMPER (DAMPER CORD STRINGING)

Preparation

Remove in number-order.

1. Fig. 4-1, 2- and 3.

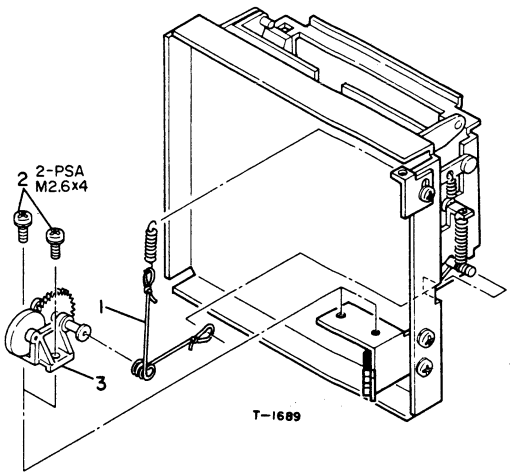


Fig. 4-2 Cassette Damper

4-3. CASSETTE HOLDER ASS'Y

Preparation

Remove in number-order.

Fig. 4-1, 1-thru-6.

Fig. 4-2, 1

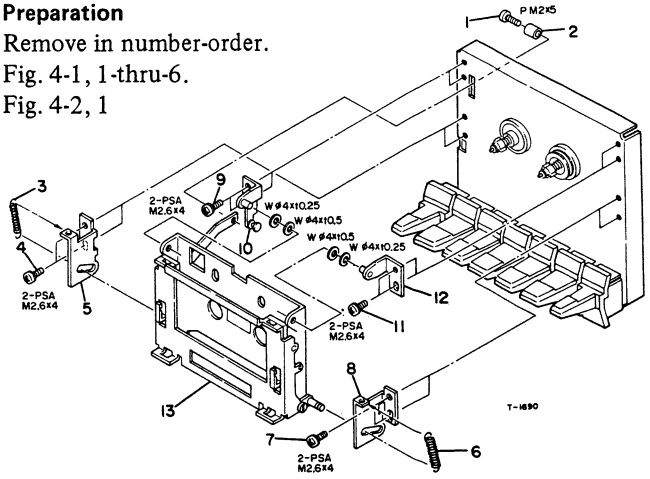


Fig. 4-3 Cassette Holder Ass'y

4-4. HEAD/PINCH ROLLER

Preparation

Remove in number-order.

Fig. 4-1, 1-thru-6.

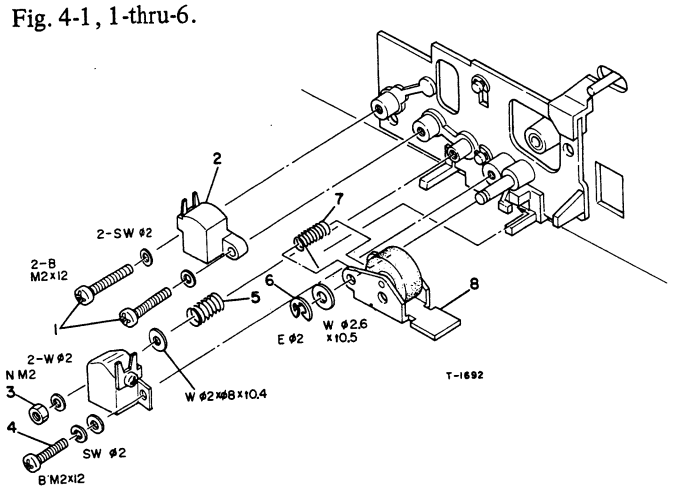


Fig. 4-4 Head/Pinch Roller

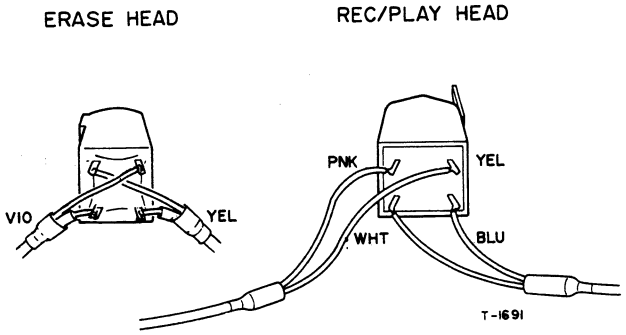


Fig. 4-5 Head Wiring Diagram

NOTE:
1. After replacing the head, always adjust the head alignment, especially the Record/Playback Head's azimuth and then secure the screws and/or the nut with a drop of locking paint.
2. Connect the wires to the head terminal pins quickly to prevent breaking of internal wires of the head due to overheating.
3. After replacement, always clean the driving surfaces of the Pinch Roller with the TEAC TZ-261B Rubber Cleaner or with pure alcohol, then proceed directly to the PINCH ROLLER PRESSURE adjustment section.

4-5. REEL TABLES

Preparation

Remove in number-order.

1. Fig. 4-1, 1-thru-6.
2. Fig. 4-2, 1.
3. Fig. 4-3, 1-thru-13.

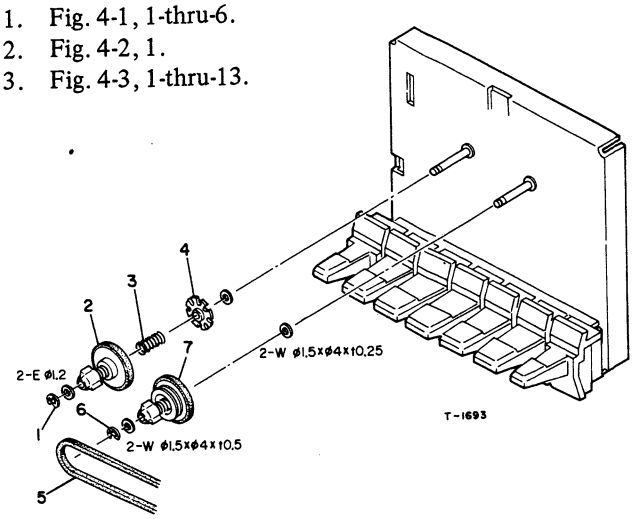


Fig. 4-6 Reel Tables

4-6. BRAKE PLATE ASS'Y

Preparation

Remove in number-order.

1. Fig. 4-1, 1-thru-6.
2. Fig. 4-2, 1.
3. Fig. 4-3, 1-thru-13.

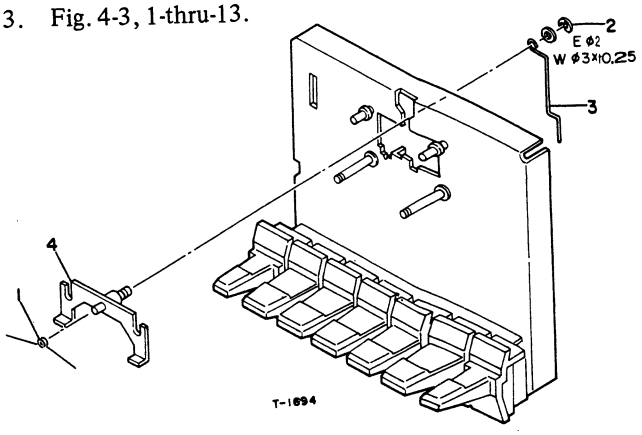


Fig. 4-7 Brake Plate Ass'y

4-7. MOTOR

Preparation

Remove in number-order.

1. Fig. 4-1, 2 and 3.

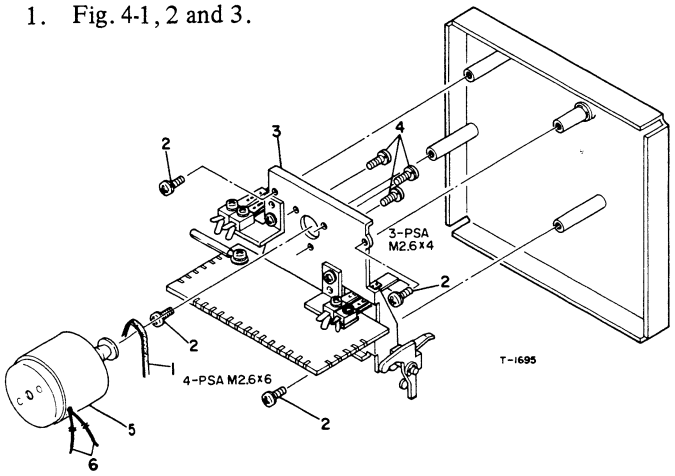


Fig. 4-8 Motor

NOTE:
1. When re-assembling, clean the pulley and the Belt with TEAC TZ-261 Cleaner kit ("A" for the Pulley, "B" for the Belt) or with pure alcohol.
2. Take off or remount the Motor Ass'y taking care not to scratch or otherwise damage the Motor Pulley.
3. When re-attaching the Drive Belt to the Pulley do not twist or stretch the belt.

4-8. CAPSTAN DRIVE ASS'Y (INCLUDING LUBRICATION)

Preparation

Remove in number-order.

1. Fig. 4-1, 1-thru-3.
2. Fig. 4-8, 1-thru-3.

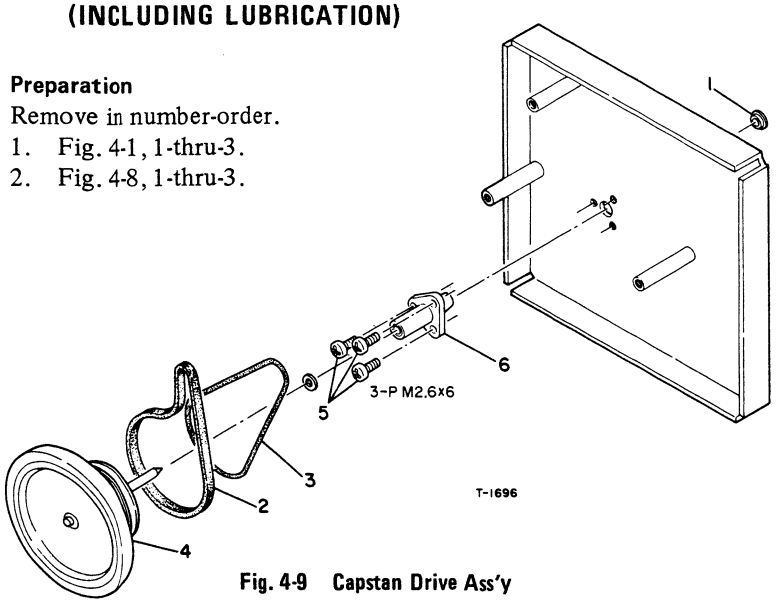


Fig. 4-9 Capstan Drive Ass'y

LUBRICATION

Lubrication should be generally done at about every 1,000 hours of operating time of the tape deck. Use high quality oil for this purpose.

For efficient oiling, it is recommended that lubrication be done after nearly 1 hour of idling of the deck and while it is still warm.

Normally, it is necessary to lubricate only the areas described below.

1. Apply a drop of a light machine oil of good quality (e.g.: TEAC TZ-255) with an oil applicator to the shaft of the Flywheel and spread oil evenly over the shaft with a flannel cloth. After installing the Flywheel, be sure to clean the tape moving portion of shaft with TEAC TZ-261 A Head Cleaner or with pure alcohol.
2. Apply a drop of the proper oil in the same way as above to the innermost area of capstan shaft (next to the Flywheel).
3. Apply a film of light grease to the well of the Flywheel Bearing.

4-9. IDLER/TENSION PULLEY

Preparation

Remove in number-order.

1. Fig. 4-1, 2 and 3.
2. Fig. 4-8, 1-thru-3.
3. Fig. 4-9, 1-thru-4.

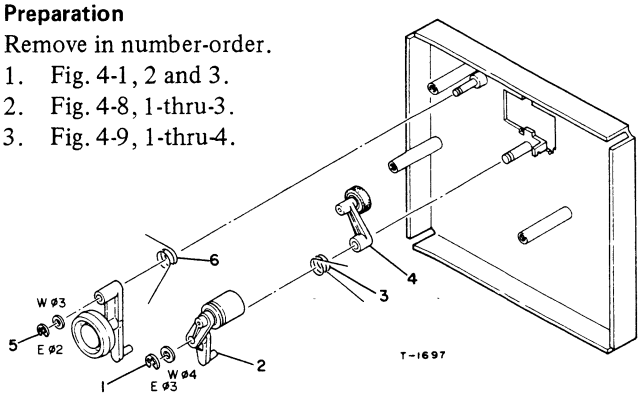


Fig. 4-10 Idler/Tension Pulley Ass'y

5. MECHANICAL CHECKS AND ADJUSTMENTS

5-1. TAKE-UP TORQUE

Specification: 40 to 60 g·cm (0.6 to 0.8 oz·inch)

1. Depress POWER Switch ON to apply AC power.
2. Load the Cassette Torque Meter (for take-up: 0 to 100 g·cm or 1.4 oz·inch).
3. Place the deck in the PLAY mode and read the pointer indication on the dial scale.
4. The Meter should indicate a torque of 40 to 60 g·cm (0.6 to 0.8 oz·inch).
5. If the reading is out of specified range, clean the driving surfaces of the Reel Table Ass'y and all other driving parts relative to the take up torque function with the TEAC TZ-261B Rubber Cleaner or with pure alcohol.
6. If the above cleaning is ineffective for torque correction, replace the Reel Table Ass'y.

5-2. FAST FORWARD & REWIND TORQUE

Specification:
Fast Forward toque: 80 to 150 g·cm (1.1 to 2.1 oz·inch)
Rewind torque: 100 to 150 g·cm (1.4 to 2.1 oz·inch)

1. Depress POWER Switch ON to apply AC power.
2. Load the Cassette Torque Meter (for fast forward and rewind torque: 0 to 160 g·cm or 0 to 2.2 oz·inch).
3. Place the deck in the FF or REW mode and read the pointer indication on the dial scale.
4. The Meter should indicate a torque of 80 to 150 g·cm (1.1 to 2.1 oz·inch) as Fast Forward Torque and 100 to 150 g·cm (1.4 to 2.1 oz·inch) as Rewind Torque.
5. If the indication is out of specified range, clean the driving surfaces of the Reel Table Ass'y and all other driving parts relative to the Fast Forward & Rewind torque function with the TEAC TZ-261B Rubber Cleaner or with pure alcohol.
6. If the above cleaning is ineffective for the torque correction, replace the driving parts relative to these torques.

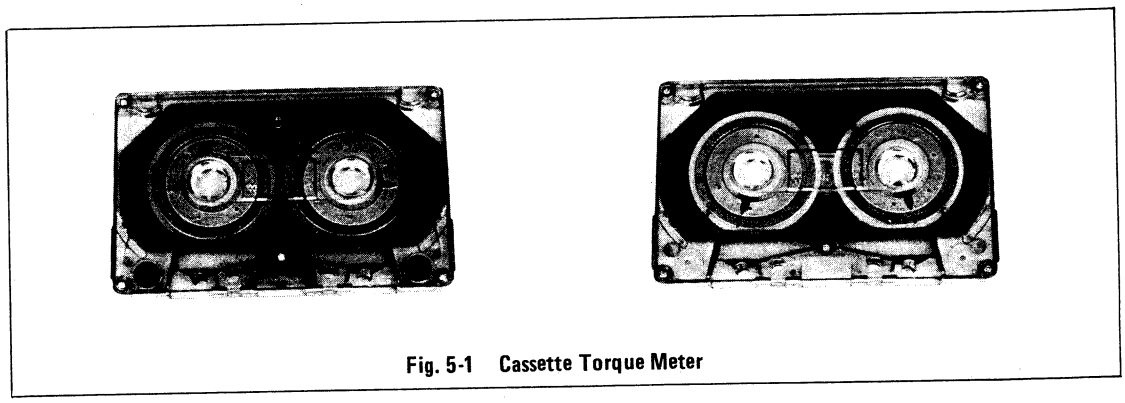


Fig. 5-1 Cassette Torque Meter

5-3. PINCH ROLLER PRESSURE

Specification: 400 g ± 50 g (12.3 to 15.9 oz)

1. Remove Front Panel, then Cassette Holder Ass'y.
2. Depress POWER Switch ON to apply AC power.
3. Place the deck in the PLAY mode with no tape loaded.
4. Attach the spring scale to the Pinch Roller shaft as shown.
5. Gently draw the Pinch Roller away from the Capstan shaft in a directly downward direction until the Capstan shaft and the Pinch Roller are completely separated.
6. Gradually return the scale back until the Pinch Roller just begins to rotate. The scale should then be reading approximately 400 g ± 50 g (12.3 to 15.9 oz).
7. If the reading is out of specified range, replace the Pinch Roller Ass'y or the Pressure Spring or adjust the Spring Arm as shown.

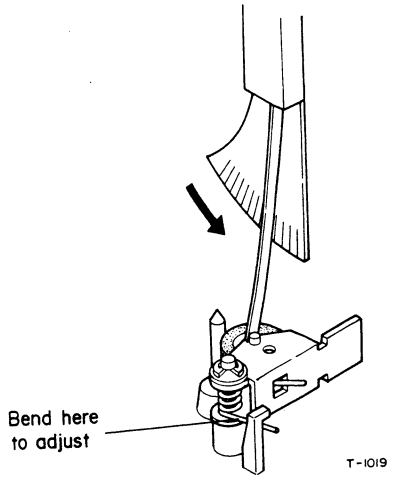


Fig. 5-2 Pinch Roller Pressure Measurement

5-4. TAPE SPEED/WOW AND FLUTTER

Specification:

Tape Speed Deviation:	3,000 Hz ± 45 Hz
Tape Speed Drift:	45 Hz
Wow and Flutter:	Playback: 0.10% (WRMS)
	Record/Playback: 0.25% (RMS)

NOTE:
1. Before performing this adjustment, clean all parts in the tape path, particularly the Capstan, the Pinch Roller and the Heads with the appropriate liquid from the TEAC TZ-261 Cleaner Kit or with pure alcohol.
2. Wow and flutter should be checked in two ways; Playback only and Record/Playback methods. First correct tape speed and wow and flutter using the playback only method. Then measure wow and flutter using record and playback method.
3. As the measured results may vary with respect to location on tape at which it was taken, three points – at beginning, middle and near the end of the tape – should be measured.

5-4-1. TAPE SPEED

1. Connect test equipment to the deck, except the AF oscillator, as shown in Fig. 5-3.
2. Set the EQ switch to NORMAL position, and then load and play a TEAC MTT-111 test tape (3,000 Hz signal is recorded).
3. Adjust the control located at the center of the Motor for reading of 3,000 Hz ± 10 Hz on the frequency counter.
   (NOTE: This tape speed setting should be done after approx. 30 seconds of operating time of the deck).
4. Then, verify the reading on the frequency counter as within the specified range of 3,000 Hz ± 45 Hz, and the tape speed drift is within 45 Hz at any portion of the tape run.
5. If the tape speed is extremely out of the specification, check the Pinch Roller pressure and the tape driving function for correction, and make sure the tape path is clean.

5-4-2. WOW AND FLUTTER

After making the tape speed measurement, perform the wow and flutter test using the Playback Method and the Record/Playback Method successively.

PLAYBACK METHOD

1. Play the MTT-111 test tape.
2. Read the indication on the wow and flutter meter.
3. The wow and flutter value should be 0.10% WRMS, max.

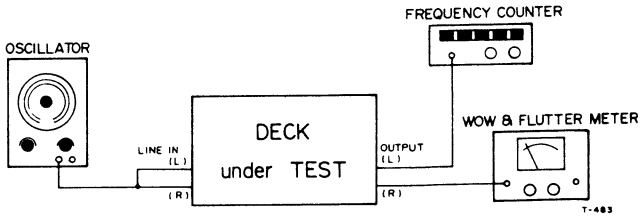


Fig. 5-3 Tape Speed/Wow & Flutter Measurement Setup

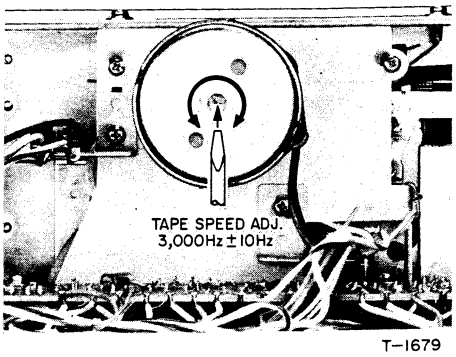


Fig. 5-4 Tape Speed Adjustment Location

4. If the wow and flutter is out of specification, check the Pinch Roller pressure and the take-up torque, see that the tape path is clean, and that the Capstan Belt is not stretched or oily.
5. If the above checks are ineffective for excessive wow and flutter correction, repair or replace the Pinch Roller, the Capstan Belt and/or any other defective parts.

RECORD/PLAYBACK METHOD

NOTE: When using this method, adopt the maximum wow and flutter value obtained by repeated play and stop modes of operation. This operation is necessary to make sure wow and flutter content between record and playback will not be in phase to create a false reading.

1. Connect test equipment to the deck as shown in Fig. 5-3.
2. Set LINE or RECORD controls on the deck to obtain convenient input levels.
3. Load a TEAC MTT-501 test tape (blank) and set the BIAS/EQ switches in the NORMAL positions.
4. Apply and record a 3,000 Hz signal.
5. Rewind and play this recorded section.
6. Read the indication on the wow and flutter meter.
7. The wow and flutter value should be 0.25% RMS max.
8. If the measured value is out of specification, repair using the same methods as stated in steps 4 – 5 in the Playback Method procedure.

6. ELECTRICAL CHECKS AND ADJUSTMENTS

6-1. GENERAL PRELIMINARY INFORMATION

6-1-1. GENERAL NOTICE

1. Before performing adjustments on the amplifier section of this deck, thoroughly clean and demagnetize the entire tape path, particularly the erase head, record and playback heads, capstan shaft and pinch roller.
2. Make sure the deck is properly set for the voltage in your locality.
3. In general, checks and adjustments, other than specified items, are done in the sequence – left channel then right channel. Double REF. Nos. indicate left channel/right channel (example: VR101/VR201).
4. The value of "dB" in the text refers to 0 dB = 0.775 V, except where specified. If an AC voltmeter calibrated to 0 dB = 1 V is to be used, appropriate compensation should be made.
5. The AC voltmeter used in the procedures, including the measurements at DOLBY test points, must have an input impedance of 1 M-ohms or more.
6. To complete these performance checks correctly, follow the order given in this chapter.

6-1-2. PREPARATIONS

1. For each procedure, make the initial equipment test set up and connections as shown in the associated illustrations.
2. Unless indicated otherwise in the procedures, the basic starting conditions for each test will be as given in the chart below.

Switch/Control	Position
SIMUL-SYNC	NORMAL
CROSS FEED	NORMAL
INPUT	LINE
BIAS	CrO_2
EQ	CrO_2
DOLBY NR	OUT
MIC BLEND	MIN

6-2. PLAYBACK PERFORMANCE

6-2-1. RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENTS

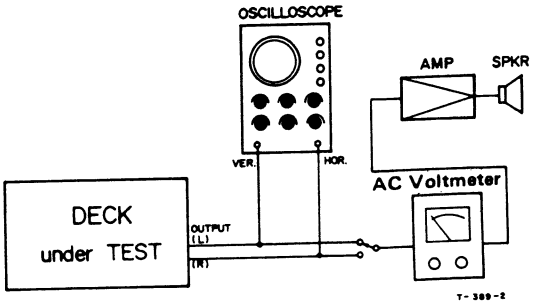


Fig. 6-1 Connection

1. Load and play a TEAC MTT-150 test tape.
2. Make sure the phase relationship between the 2 signals (left channel and right channel) is within 45° on the oscilloscope.
3. Load a TEAC MTT-316 test tape.
4. Play the 10 kHz signal section of the tape.
5. Adjust the azimuth adjusting nut for the greatest output level.
6. After adjustment is made, apply a drop of locking paint to the adjustment nut.

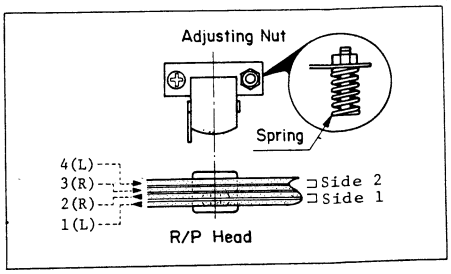


Fig. 6-2 Head Azimuth Adjustment Location

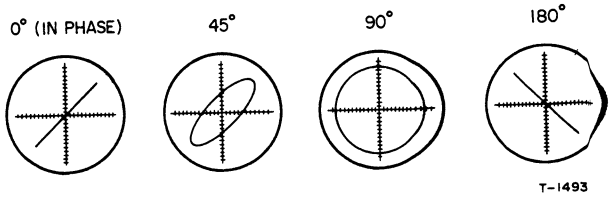


Fig. 6-3 Confirming Phase Relationship

6-2-2. SPECIFIED OUTPUT LEVEL SETTING

Specification:
Specified output level: −5 dB (435 mV)

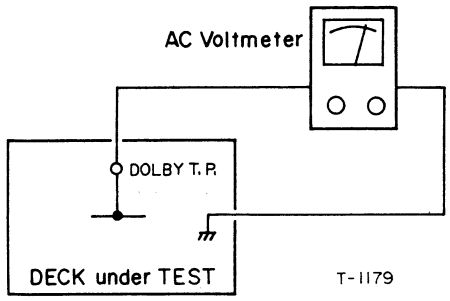


Fig. 6-4 Connection

1. Load and play a TEAC MTT-150 test tape.
2. Adjust R180/R280 for 580 mV (−2.5 dB) on AC Voltmeter connected to the Dolby test points.
3. Change the AC Voltmeter connection to the OUTPUT jacks as shown in Fig. 6-5.
4. Check for −5 dB (435 mV) specified level.

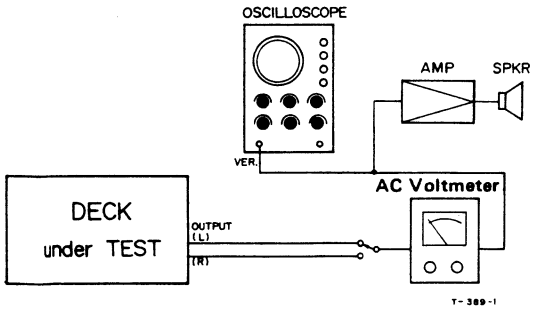


Fig. 6-5 Connection

6-2-3. VU LEVEL METER CALIBRATION

Specification: +3 VU

5. With the specified setting in paragraph 6-2-2, play the MTT-150 test tape and adjust R182/R282 for +3 VU indication on the VU Meters.

6-2-4. FREQUENCY RESPONSE – PLAYBACK –

6. Load and play the MTT-316 test tape.
7. Play the 315 Hz section of the test tape to get a reference level on the AC Voltmeter. Then play the required test signals for comparison with the playback Frequency Response Limits chart. (Fig. 6-6).
8. Check that the readings obtained on the AC Voltmeter are within the response limits.

NOTE: If the response does not meet the specified response limits, the head should be checked for accumulated oxide or dirt. Then, if no dirt is found, the head azimuth should be readjusted.

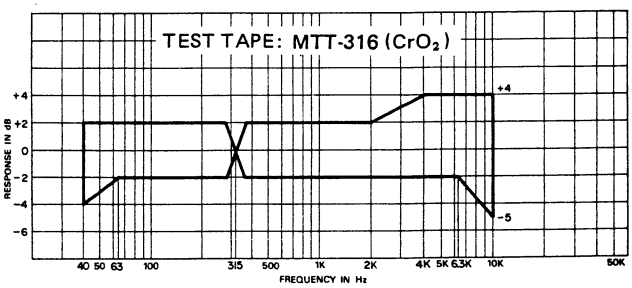


Fig. 6-6 Playback Frequency Response Limits

6-2-5. SIGNAL TO NOISE RATIO – PLAYBACK –

Specification: 46 dB (min.)
(w/MIC BLEND in MIN position)
43 dB (min.)
(w/MIC BLEND in MAX position)

NORMAL

1. Connect the deck and the test equipments as shown in Fig. 6-5.
2. Set the EQ switch in the NORMAL position.
3. Load and play a TEAC MTT-150 test tape.
4. Confirm that by reproducing the 400 Hz test tone on the tape, the output from the deck is set to the specified output level of −5 dB (435 mV). If not, repeat the procedure in paragraph 6-2-2.
5. Change the tape to a TEAC MTT-501 test tape completely demagnetized by a bulk tape eraser (such as the TEAC E-2) and play it.
6. Read the indication on the AC voltmeter.
7. Compare the output reading to the specified output level (−5 dB) with MIC BLEND control in MIN and MAX positions.

6-2-6. HEADPHONE OUTPUT LEVEL CHECKS

Specification: −21 dB ± 3 dB (48.8 mV to 97 mV)

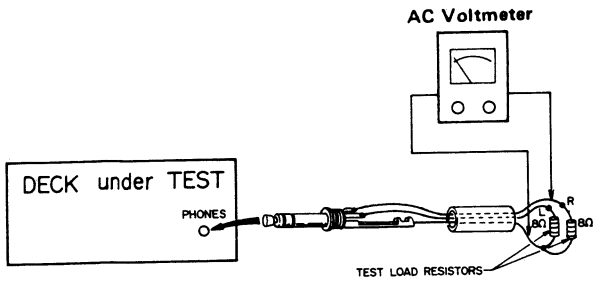


Fig. 6-7 Connection

NOTE: An 8 ohm non-inductive resistor should be used as the test load resistor.

1. Load and play a TEAC MTT-150 test tape.
2. Measure the level across the test load resistor.
3. Level should be –21 dB ± 3 dB (48.8 mV to 97 mV).

6-3. MONITOR PERFORMANCE

6-3-1. MINIMUM INPUT LEVEL CHECKS

Specification:

LINE: –19 dB ± 3 dB (61.5 mV to 123 mV)
MIC: –67 dB ± 3 dB (244 μV to 488 μV)
(–67 dB ± 4 dB (218 μV to 548 μV) in MIC BLEND position)
DIN: –35 dB ± 3 dB (9.75 mV to 19.4 mV)

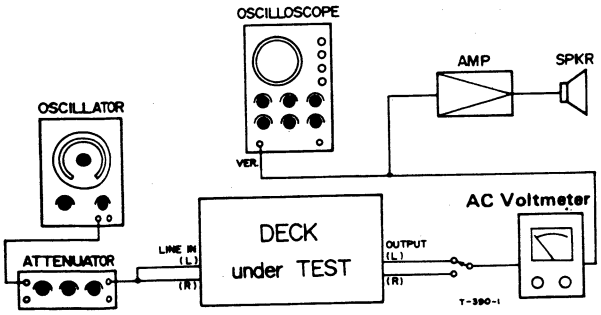


Fig. 6-8 Connection

NOTE: To prevent mis-measurements for the following procedures, any connection cords other than those for the respective input check must be removed. For example: Do not connect the Microphone and the DIN cords to the respective input jacks when checking for the LINE inputs.

(1) LINE inputs

1. Load any recordable tape.
2. Place the deck in the REC PAUSE mode.
3. Set the RECORD controls to maximum.
4. Apply a 400 Hz signal at –19 dB (86 mV) to the LINE IN jacks and check for –5 dB ± 3 dB (308 mV to 615 mV).
5. Then, if the level difference between channels is more than 2 dB, adjust R120 and/or R220 so that the level difference becomes less than 2 dB between channels.

(2) MIC jacks

6. Set the INPUT switch to MIC/DIN.
7. Apply a 400 Hz signal at –67 dB (345 μV) to the MIC jacks and check for –5 dB ± 3 dB.
8. Regardless of the INPUT switch setting, set the MIC BLEND control to the MAX position.
9. Apply a 400 Hz signal at –67 dB into the MIC LEFT-BLEND jack. Do NOT connect the microphone plug into MIC RIGHT jack.
10. Set the deck in the play mode.
11. Check that –5 dB ± 4 dB (275 mV to 690 mV) is output from the OUTPUT jacks.

(3) DIN inputs

12. Remove the MIC input. Set the MIC BLEND control to the MIN position. Apply a 400 Hz signal at –35 dB (13.7 mV) to the input terminals of the DIN connector and check for –5 dB ± 3 dB.
13. For the following tests, set the INPUT switch to LINE. At this time, of course, remove the DIN connector and then connect the input signal to the LINE IN jacks.

6-3-2. SPECIFIED RECORD CONTROL SETTING

Specification: Specified input level: –9 dB (274 mV)

14. Apply a 400 Hz signal at –9 dB (274 mV) to the LINE IN jacks.
15. Change the AC Voltmeter connection to the DOLBY test points.

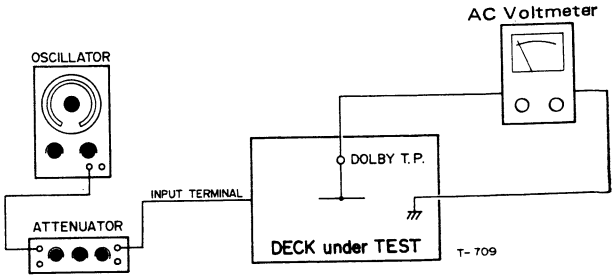


Fig. 6-9 Connection

16. Set the RECORD controls to obtain a reading of 580 mV (–2.5 dB) on the AC Voltmeter.
17. Change the AC Voltmeter connection to the OUTPUT Jacks and check that OUTPUT level on the deck is –5 dB ± 1 dB (388 mV to 488 mV). At this time, the physical position of the RECORD controls indicates the Specified RECORD Control Setting referred to in subsequent procedures.

NOTE: After this setting is done, do not disturb the Specified Control Setting of the RECORD controls until the remaining checks and adjustment are completed.

6-3-3. VU METER CALIBRATION CHECKS

Specification: +3 VU ±1 VU

18. Make certain that the indication on the VU Meter on the deck is +3 VU ±1 VU.

6-4. RECORDING PERFORMANCE

NOTE: Before making any adjustments of the recording circuit, be sure that all tests in the preceding performance sections have been accomplished. The preceding performance should be properly adjusted, otherwise record calibration will be inaccurate.

6-4-1. BIAS TRAP ADJUSTMENTS

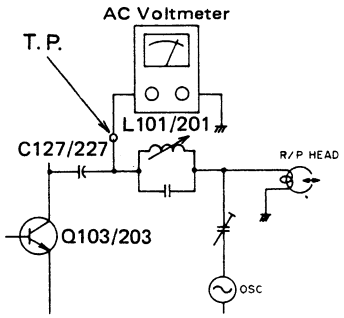


Fig. 6-10 Connection

NOTE: The AC Voltmeter used in this procedure must have an input impedance of 1M ohm or more.

1. Connect the AC Voltmeter to the BIAS TRAP test point.
2. Load any recordable tape.
3. Place the deck in the REC PAUSE mode with no signal applied.
4. Adjust L101/201 for a minimum reading.

6-4-2. RECORD BIAS SETTING

CrO_2

1. Connect the deck and the test equipment as shown in Fig. 6-8.
2. Load a TEAC MTT-506 test tape.
3. Place the deck in the record mode.
4. Apply 2 tone signals, in turn; a 400 Hz tone at −42 dB (6.15 mV) and a 6.3 kHz tone at −42 dB.
5. Rewind and play this recorded section.
6. Compare the difference between the output level of the 400 Hz signals and that of the 6.3 kHz signal on the AC Voltmeter.
7. The output level of the 400 Hz signal and that of the 6.3 kHz signal must be the same value.
8. Adjust PC301/303, if necessary, to achieve this.
9. Continue the process of the recording-rewinding-playing-adjusting until the 400 Hz and 6.3 kHz signals produce the same output level.

NORMAL

10. Set the BIAS/EQ switches to NORMAL position and the DOLBY NR switch to IN position.
11. Load an MTT-501 test tape and repeat the above steps 3 to 9 except adjust PC302/304 until the 6.3 kHz signal level is +2 dB above the 400 Hz signal.

6-4-3. RECORD LEVEL SETTING

CrO_2

12. Load a TEAC MTT-506 test tape, set the BIAS/EQ Switches to the CrO_2 position and DOLBY NR switch OUT.
13. Apply and record a 400 Hz test signal at −12 dB (194 mV).
14. Rewind and play this recorded section.
15. Adjust R181/281 to obtain −8 dB (308 mV) OUTPUT Level.
16. Continue the process of recording-rewinding-playing-adjusting until this −8 dB is obtained.

NORMAL

17. Repeat the above "CrO_2" procedure, with the following exceptions.

BIAS/EQ switches:	NORMAL
Test tape:	MTT-501
Adjustments:	R135/235

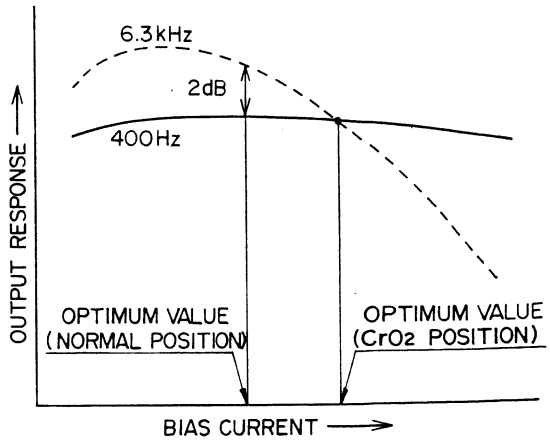


Fig. 6-11 Bias Adjustment

6-4-4. DISTORTION CHECKS

Specifications:

CrO_2:	2.2% or less
NORMAL:	2.5% or less

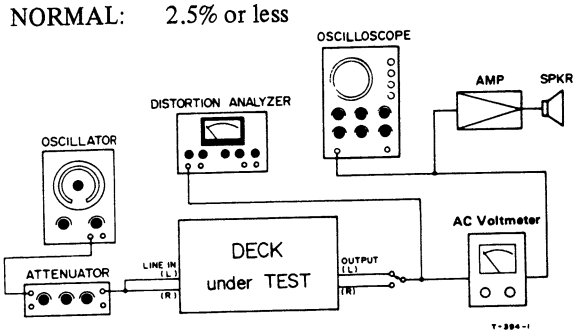


Fig. 6-12 Connection

CrO_2

1. Load a TEAC MTT-506 test tape.
2. Apply and record a 400 Hz test tone at −12 dB (194 mV).
3. Rewind and play this recorded section.
4. Read the indicated value on the distortion analyzer.

NORMAL

5. Repeat the "CrO_2" procedure, with the following exceptions.

BIAS/EQ switches:	NORMAL
Test tape:	MTT-501

6-4-5. FREQUENCY RESPONSE – OVERALL –

CrO_2

1. Connect the deck and the test equipment as shown in Fig. 6-8.
2. Load a TEAC MTT-506 test tape.
3. Apply and record a test signal, containing the necessary frequencies for comparison with applicable Overall Frequency Response Limits chart, at −42 dB (6.15 mV).
4. Rewind and play this recorded section.
5. Make sure the readings on the AC Voltmeter are within the response limits.
6. In case of any deviation in the high frequency range of the response limits, clean the heads.
7. If this cleaning is ineffective, recheck whether the record bias setting is correct or not. If not, readjust this and then recheck and correct the affected procedures.

NORMAL

8. Repeat the "CrO_2" procedure, with the following exceptions.

BIAS/EQ switches:	"NORMAL" position
Test tape:	MTT-501

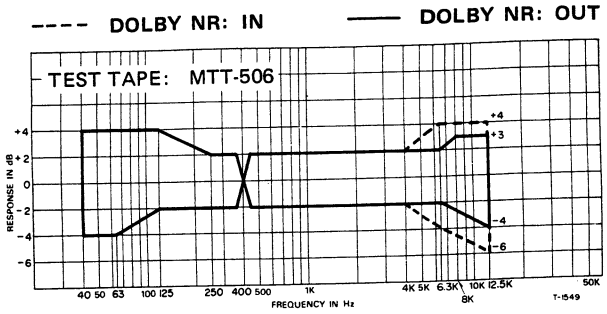


Fig. 6-13 Overall Frequency Response Limits (for BIAS/EQ: CrO_2)

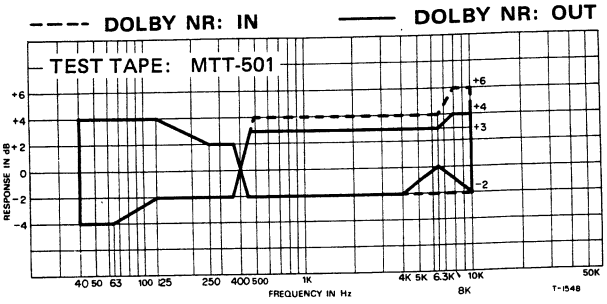


Fig. 6-14 Overall Frequency Response Limits (for BIAS/EQ:NORMAL)

6-4-6. SIGNAL TO NOISE RATIO – OVERALL –

Specifications:

CrO_2:	45 dB (min.)
NORMAL:	44 dB (min.)

CrO_2

1. Connect the deck and the test equipment as shown in Fig. 6-8.
2. Initially make sure that deck is set in specified recording and playback condition.
3. Load the TEAC MTT-506 test tape.
4. Apply and record specified input level of −9 dB (275 mV) of 1 kHz signal for several seconds.
5. Then continue recording with no signal applied for a few seconds.
6. Rewind the tape to the beginning of the 1 kHz signal recorded portion.
7. Play and obtain the output level difference between the 1 kHz signal recorded portion and no signal recorded portion.

NORMAL

8. Repeat the "CrO_2" procedure, except use the TEAC MTT-501 test tape and set BIAS/EQ switches to NORMAL position.

6-4-7. CHANNEL SEPARATION

Specification: 30 dB (min.)

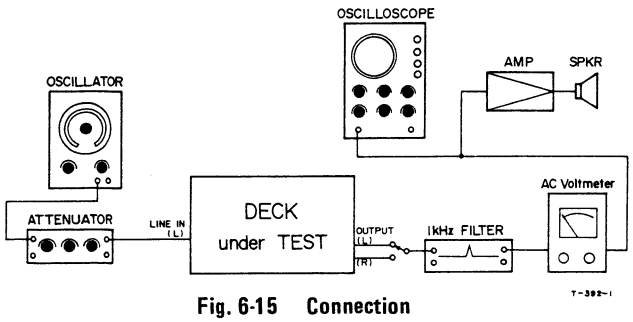


Fig. 6-15 Connection

NOTE: To check channel separation (cross talk between channels), a 1 kHz narrow bandpass filter should be used. The test signal delivered from an AF oscillator should be tuned to the filter used.

Numbers in parentheses correspond to steps in Fig. 6-16.

1. Load a TEAC MTT-506 test tape.
2. Apply a 1 kHz test tone at –9 dB (274 mV) to the left channel.
3. Place the deck in the record mode for about 30 seconds. . . . . (1)
4. Rewind the tape to the starting point of recording. (2)
5. Play the tape and measure the output level differences between the left and right channels . . . . . (3)
6. A 30 dB difference or more is required.

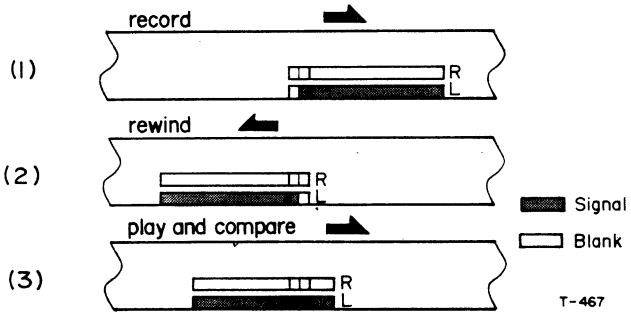


Fig. 6-16 Channel Separation Check Procedure

6-4-8. ERASE EFFICIENCY

Specification: 65 dB (min.) (regular stereo recording)
60 dB (min.) (SIMUL-SYNC recording)

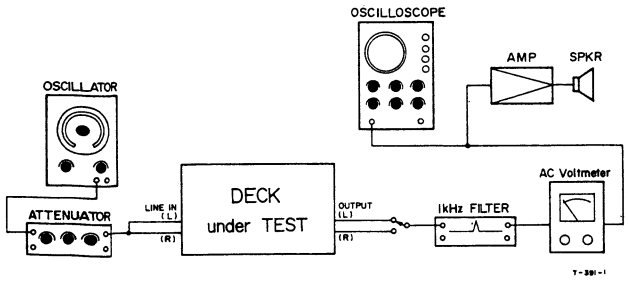


Fig. 6-17 Connection

NOTE: To measure erase efficiency, a 1 kHz narrow bandpass filter should be used. The test signal delivered from the AF oscillator should be tuned to the filter used.

Numbers in parentheses correspond to steps in Fig. 6-18.

1. Load a TEAC MTT-506 test tape.
2. Apply and record a 1 kHz signal at +1 dB (0.869 V) for several seconds . . . . . (1)
3. Rewind the tape to the mid-point of the recording and remove the signal from the LINE IN jacks. . . . . (2)
4. Place the deck in the record mode and record through this previously recorded portion with no input signal applied . . . . . (3)
5. Rewind the tape to the starting point of the 1 kHz signal recorded portion . . . . . (4)
6. Play the tape and read the indication on the AC Voltmeter to obtain the output level of both the unerased portion and the erased portion of the recorded section . . . . . (5)
7. Measure the output level differences between the 2 portions.
8. With SIMUL-SYNC switch in SYNC position, also check the erase efficiency of the right channel only using the above instructions. At this time, make sure that the left channel recording is inhibited.

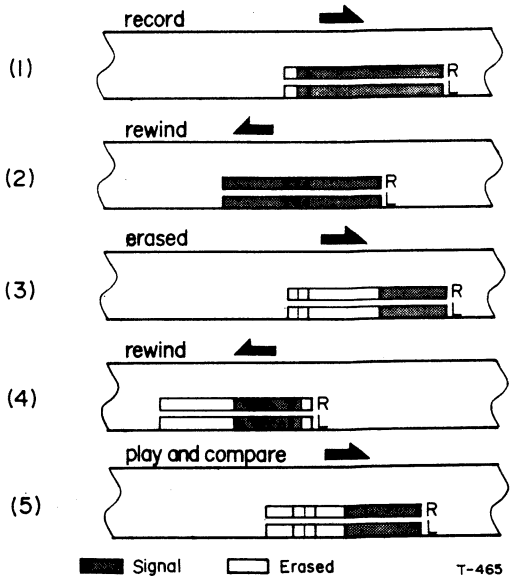


Fig. 6-18 Erase Efficiency Check Procedure

6-4-9. ADJACENT TRACK CROSSTALK MEASUREMENT

Specification: 40 dB (min.)

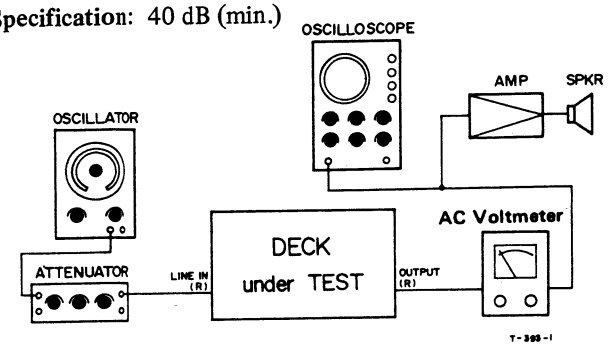


Fig. 6-19 Connection

NOTE: The tape must be completely erased or demagenetized prior to this procedure.

Numbers in parentheses correspond to steps in Fig. 6-20.

1. Load a TEAC MTT-506 test tape.
2. Apply a 125 Hz test signal at –9 dB (274 mV).
3. Place the deck in the record mode for about 30 seconds. . . . . (1)
4. Rewind the tape to the starting point of the recording. . . . . (2)
5. Play the tape and measure the output level of the recorded portion. Note this reading as a temporary reference level for the following measurements . . . (3)
6. Remove the test tape, turn it over and replace it in the deck. . . . . (4)
7. Play the tape back and read the output level . . . . (5)
8. Get the difference between this reading and the reading previously measured for the 125 Hz signal.
9. A 40 dB difference or more is required.

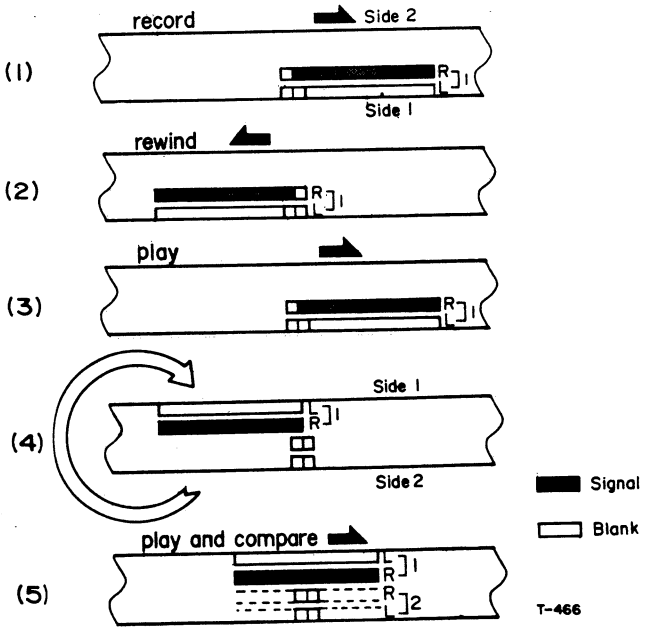


Fig. 6-20 Adjacent Track Crosstalk Measurement Procedure

6-4-10. DOLBY NR EFFECT MEASUREMENT

Specifications:

Variation from reference at 1 kHz: 3 dB to 8 dB
Variation from reference at 10 kHz: 8 dB to 12 dB

1. Connect the deck and the test equipment as shown in Fig. 6-8.
2. Load a TEAC MTT-506 test tape.
3. Apply and record a 1 kHz signal at –32 dB (19.4 mV).
4. Rewind and play this recorded section.
5. During playback, read the indication on the AC Voltmeter and note it for temporary reference level for the following measurement.
6. Set the DOLBY NR switch to IN.
7. Ensure the reading reduces 3 dB to 8 dB from the reference level.
8. Apply and record a 10 kHz signal at –42 dB (6.15 mV) with DOLBY NR to OUT.
9. In the same manner as step 4 to 7, ensure the reading reduces 8 dB to 12 dB when the DOLBY NR Switch is set to IN.

6-5. ADJUSTMENT LOCATION

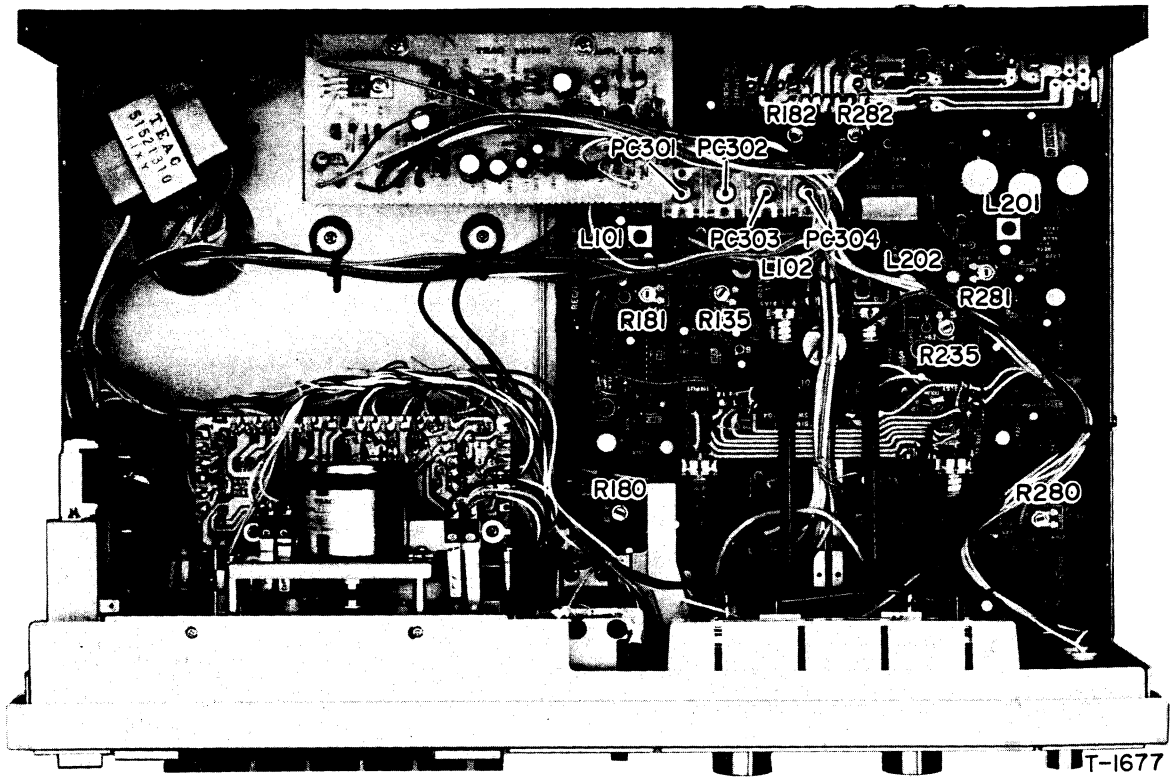


Fig. 6-21 Adjustment Location

R180/280	Playback Level
R182/282	Meter Calibration
R181/281	Record Level (CrO_2)
R135/235	Record Level (NORMAL)
PC301/303	Bias Adjustment (CrO_2)
PC302/304	Bias Adjustment (NORMAL)
L101/201	Bias Trap
L102/202	Record EQ

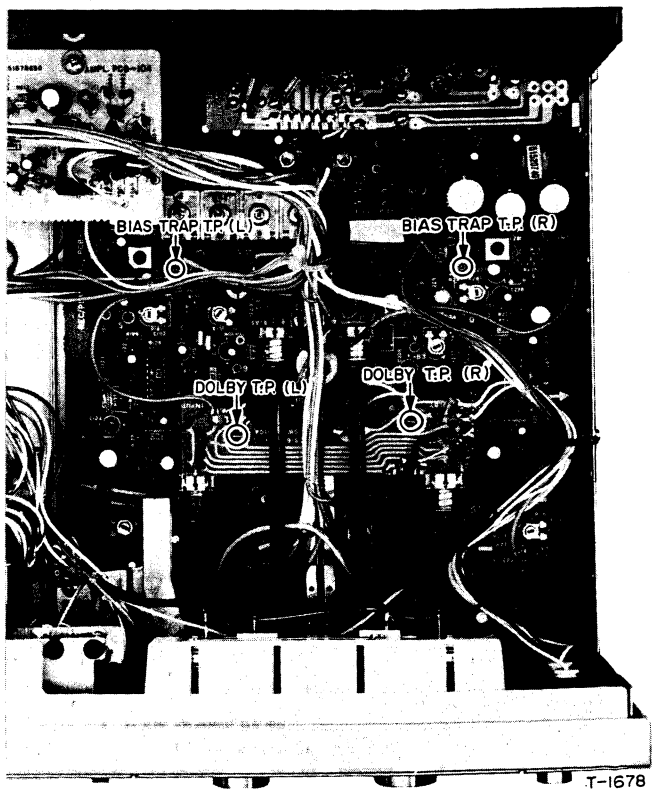
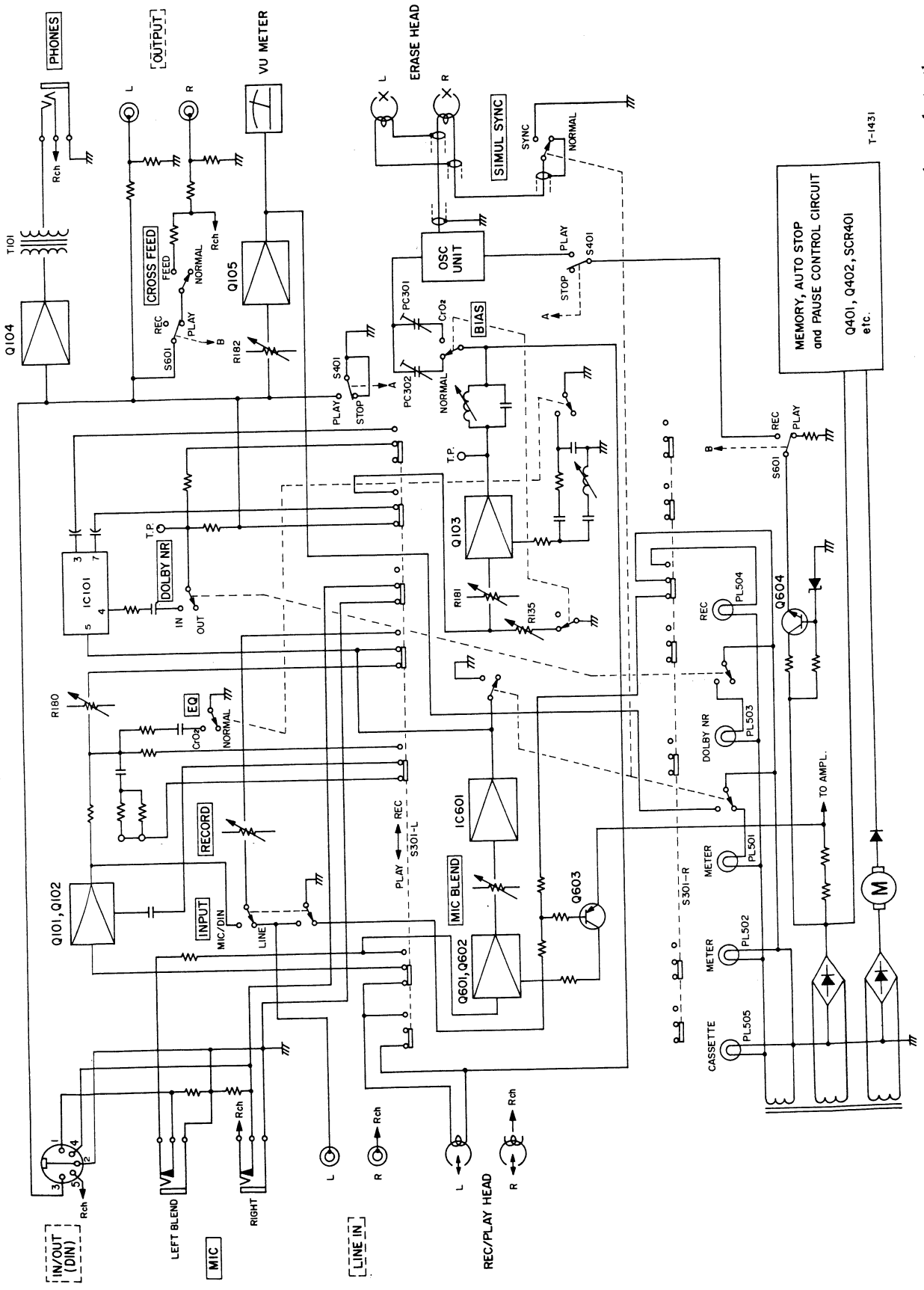


Fig. 6-22 Test Point Location

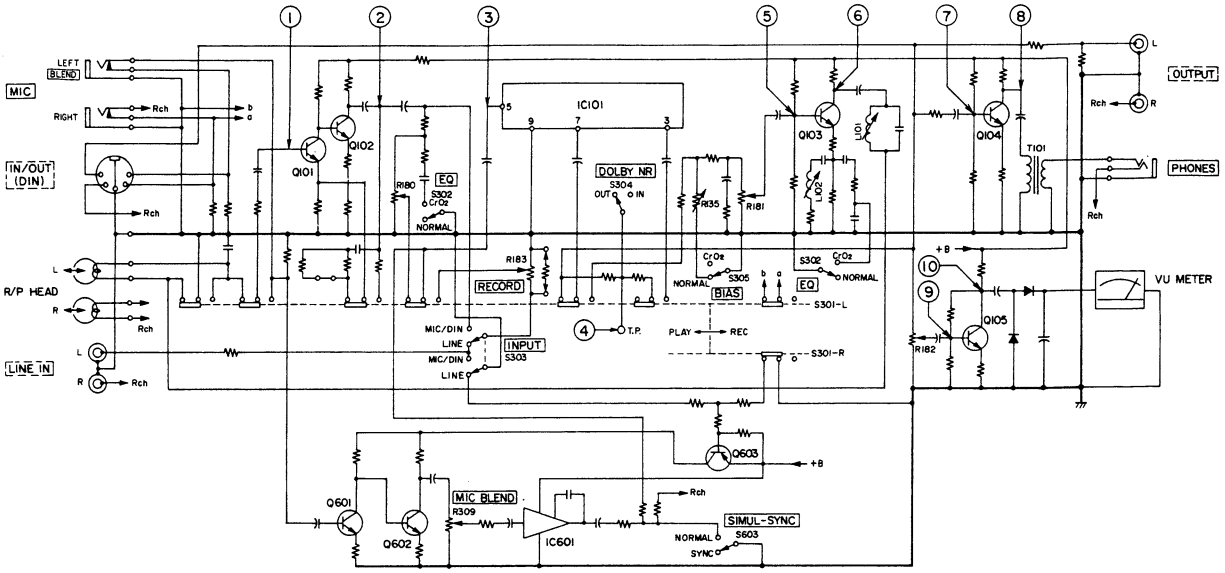
7. BLOCK DIAGRAM



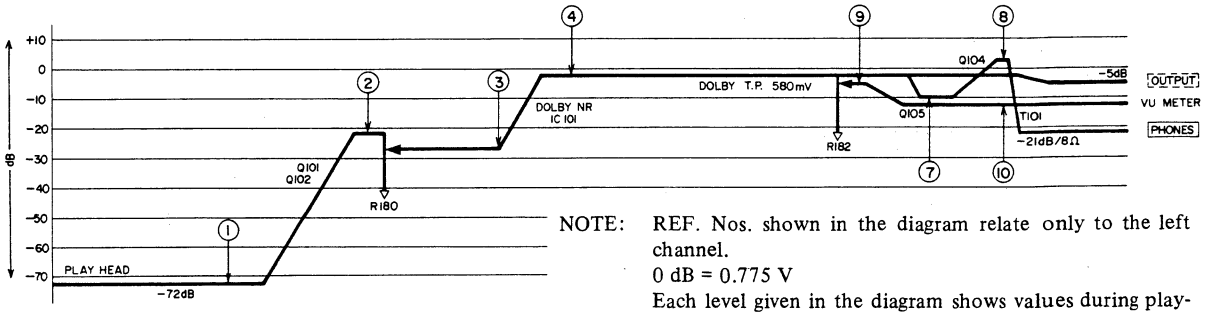
NOTE: REF. Nos. shown in the diagram relate only to the left channel.

Fig. 7-1

8. LEVEL DIAGRAM

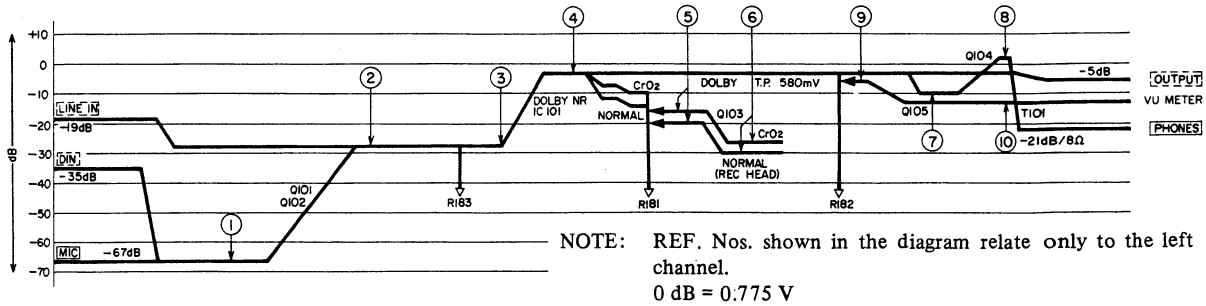


PLAYBACK SECTION



NOTE: REF. Nos. shown in the diagram relate only to the left channel.
0 dB = 0.775 V
Each level given in the diagram shows values during playback with MTT-150 Test Tape (Dolby tone).

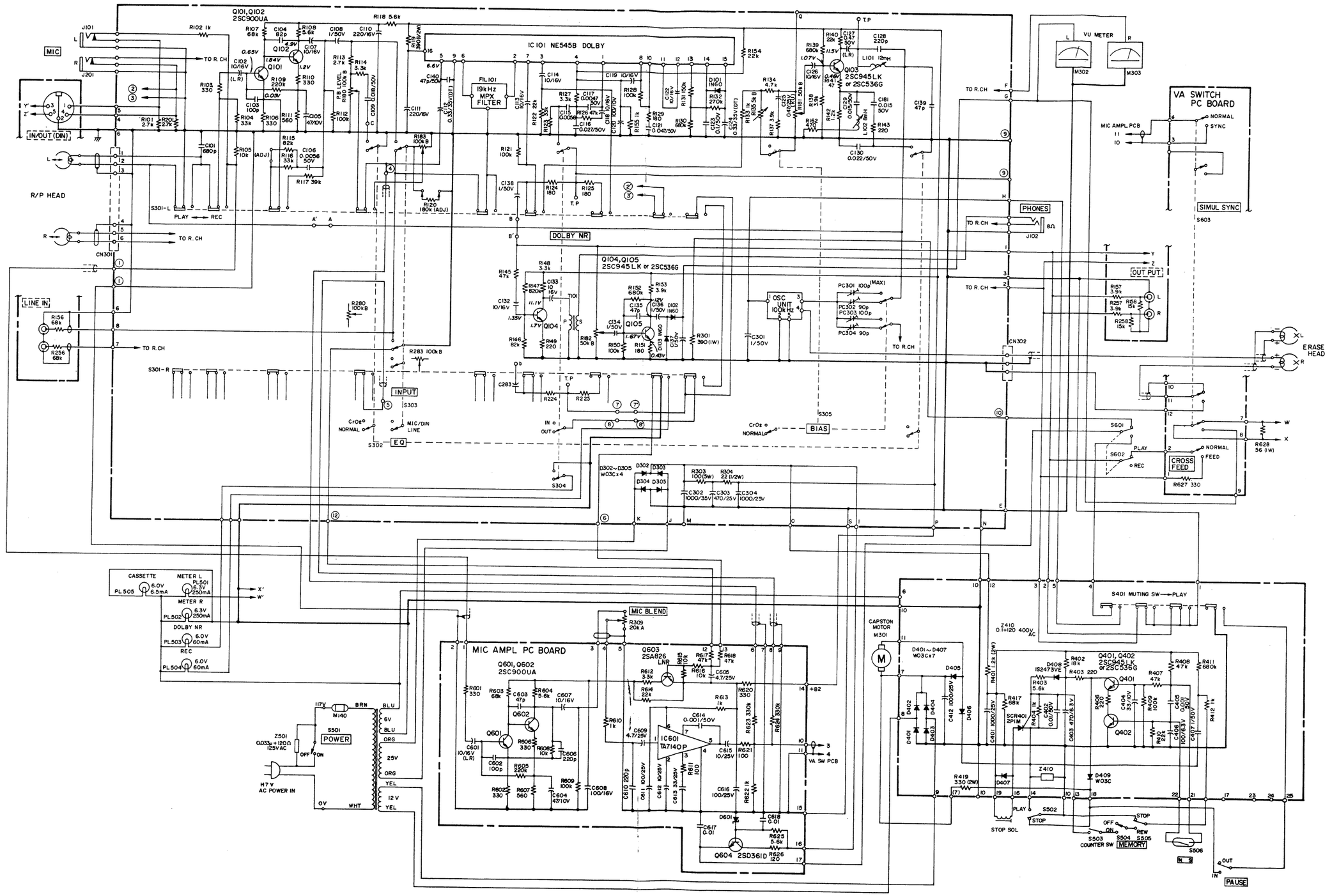
RECORDING SECTION



NOTE: REF. Nos. shown in the diagram relate only to the left channel.
0 dB = 0.775 V
RECORD control (R183) is positioned at Minimum Input Level.
Each level given in the diagram shows values when a 400 Hz Minimum Input Level is applied.

T-546

Fig. 8-1



NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k=1,000 OHMS, M=1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p=PICOFARADS).
3. SCHEMATIC DIAGRAM SHOWN FOR LEFT CHANNEL EXCEPT FOR SOME OF THE COMPONENTS.
4. DC VOLTAGES WERE MEASURED DURING RECORD PAUSE MODE.

REVISION	DATE	CHANGE NO.
6	·	
5	·	
4	·	
3	·	
2	·	
1	01·79	

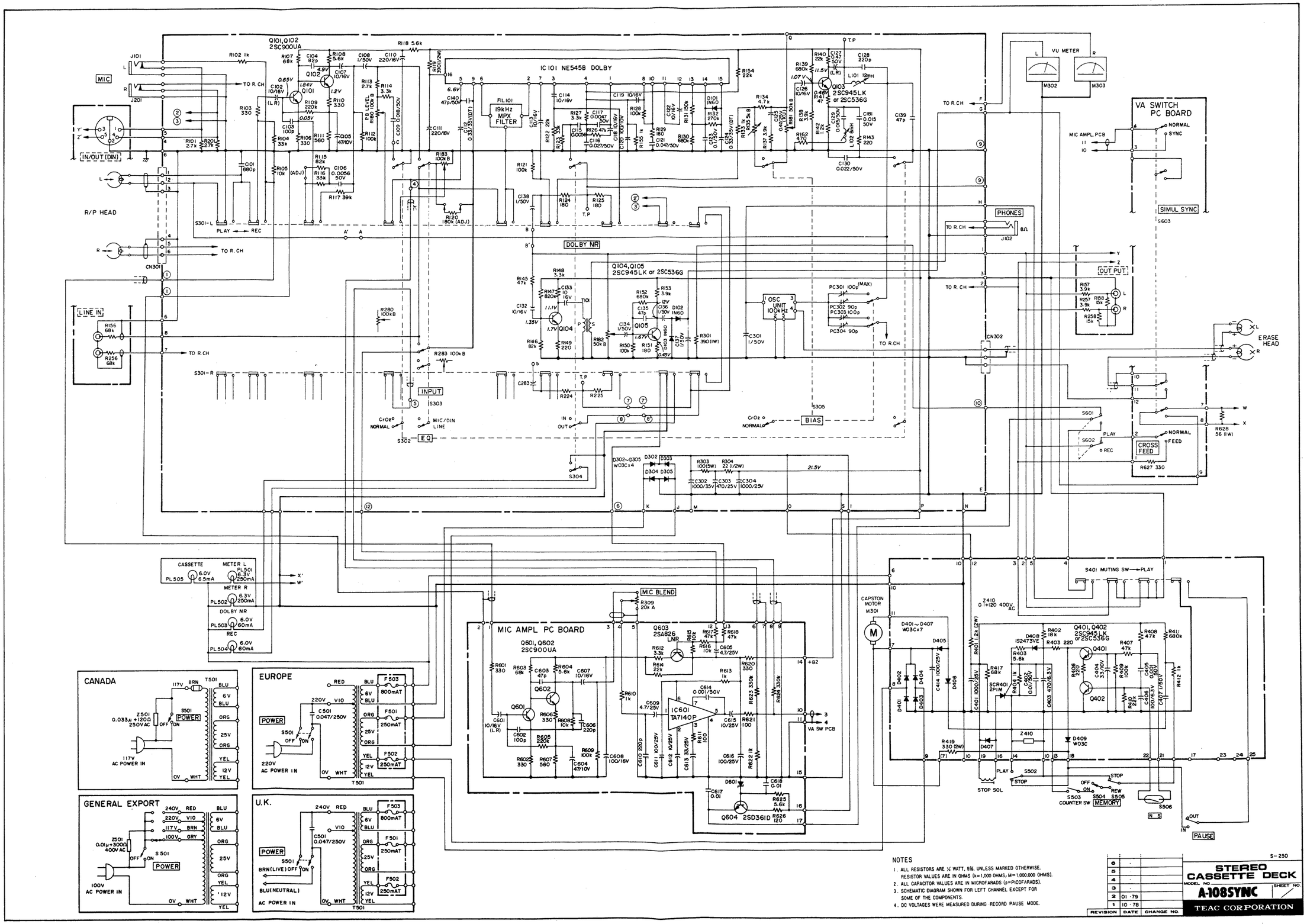
S-264

STEREO CASSETTE DECK

MODEL NO. model 124 SYNCASET

SHEET NO.

TEAC CORPORATION



NOTES

1. ALL RESISTORS ARE ¼ WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (k=1,000 OHMS, M=1,000,000 OHMS).
2. ALL CAPACITOR VALUES ARE IN MICROFARADS (p=PICOFARADS).
3. SCHEMATIC DIAGRAM SHOWN FOR LEFT CHANNEL EXCEPT FOR SOME OF THE COMPONENTS.
4. DC VOLTAGES WERE MEASURED DURING RECORD PAUSE MODE.

REVISION	DATE	CHANGE NO.
6	-	
5	-	
4	-	
3	-	
2	01·79	
1	10·78	

S-250

STEREO CASSETTE DECK

MODEL NO. A-108SYNC

SHEET NO.

TEAC CORPORATION

9. VOLTAGE AND FREQUENCY SETTING

9-1. VOLTAGE SELECTOR SETTING PROCEDURE (For General Export Models)

First always disconnent the power line cord before making these adjustments.

1. Remove the top cover of the deck by removing the two screws from the sides. Lift off cover.
2. Loosen the two screws of the MIC AMPL. PCB-104 and remove this board.
3. Locate the voltage selector shown in the illustration to the right of the power transformer and just below the MIC AMPL. PCB.
4. Loosen the two screws in the shorting bar and move the bar so that it shorts across the terminals marked with the required voltage (100, 117, 220 or 240).
5. Retighten the screws.
6. Replace the top cover.

NOTE: The selected voltage can be visually checked without removing the top cover by looking through the cutout slits in the bottom cover of the deck.

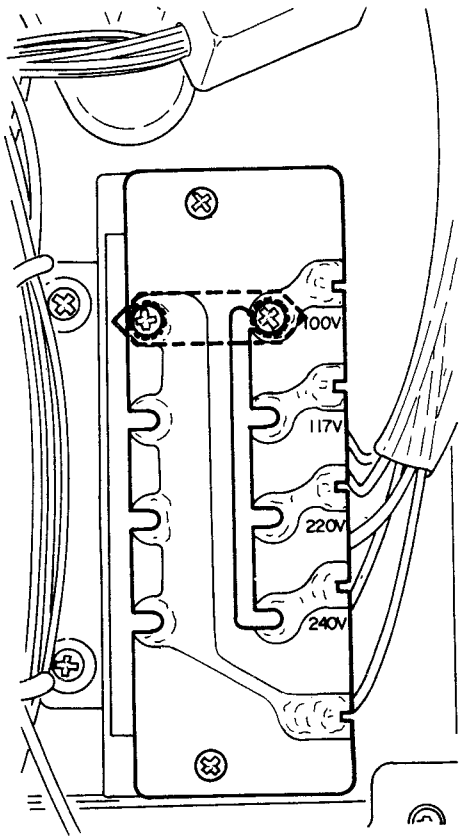


Fig. 9-1 Voltage Selector Setting

9-2. AC POWER LINE FREQUENCY ADAPTATION

Since the A-108 SYNC/model 124 SYNCASET employ a DC Servo Motor, 50 Hz or 60 Hz operation is permitted without power line frequency adaptation.